

INJECTION OR INFECTION?

A QUANTITATIVE STUDY OF COVID-19 VACCINE HESITANCY

The Covid-19 pandemic has, despite all its tragedy, led to one of the greatest scientific feats ever accomplished; an array of vaccines was developed against it in less than a year. Whilst this has bestowed hope, relief, and safety upon millions of people, many feel the opposite in the face of mass inoculation: concern, dread, and hesitancy. This thesis aims to shed light on the cognitive processes behind vaccine hesitancy through analysis of a survey sample of 1016 respondents regarding their opinions on Covid-19. The thesis concludes that whilst some socio-demographic factors did play a role in determining who might be vaccine-hesitant, another significant contributor to vaccine hesitancy was people's perception of their personal risk, and the perceived risk for society in general, of falling ill from the disease.

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INTRODUCTION

“Any sufficiently advanced technology is indistinguishable from magic.”

1.
- Arthur C Clarke, 1962

“Unfortunately, an uninformed public tends to confuse scholarship with magicianry.”

- Isaac Asimov, 1952

1.1. Background

On the 17th of August 1875, the New York Times published an article titled An Absurd Prejudice with the following opening sentences:

One might suppose that the popular prejudice against vaccination had died out by this time, considering that it has been practiced for nearly a century. But popular prejudices have a vitality that is truly wonderful. (The New York Times, 1875, p. 4)

One might indeed suppose that the popular prejudice against vaccination would have died out by now, especially since in 2021, an additional 150 years have lapsed since the New York Times thought it was about time. Alas, vaccine hesitancy is alive and well and still poses a serious health risk all around the world. At the time of writing, the world is starting to discern a faint light at the end of a very dark tunnel which has engulfed societies from Alaska to Australia for over a year: the Covid-19 pandemic. As drastic societal measures have proven ineffective, vaccination on a global scale seems to be the only way to emerge from this pandemic any time soon. That, however, hinges on people wanting to get vaccinated and, unfortunately, not everyone does.

In an article on overcoming vaccine hesitancy, Rosenbaum (2021) detailed how her hairdresser asked interested and logical questions on the pausing of the vaccination using the Astra Zeneca jab and, after hearing about how it is a great example of scientists correctly doing their jobs, had exclaimed: “there’s no effing way I’m getting a vaccine” (2021, p. 1). It would be convenient to compartmentalise all vaccine-hesitant people in with the conspiracy

nuts, flat earthers and moon landing deniers but instead it seems as if many of them are as normal as anyone can claim to be.

Who are these people living among us who would rather risk their own safety and that of those around them than getting injected with a vaccine? What has led them to draw this conclusion in the first place?

1.2. Aim of the thesis

The aim of this thesis is to determine whether an array of variables correlate with apparent hesitancy towards vaccination against Covid-19. The research question that will be addressed reads as follows: *Which are the socio-demographic and attitudinal determinants of Covid-19 vaccination intentions in Sweden?*

Although research on the impact of risk perception and conspiracy theory belief on vaccine intentions has been previously conducted, the two fields have not been combined previously for the understanding of this issue. It is the ambition of this thesis to bridge the two fields and from this amalgamation bring increased knowledge to the question of why some people choose not to vaccinate.

1.3. Scope of the study

The Swedish strategy to combat Covid-19 has puzzled international media since the outbreak of the pandemic. Journalists from Le Monde (Hivert, 2020), New York Times, (Goodman, 2020), Financial Times (Milne, 2021), and Der Spiegel (von Dietmar, 2020) have all followed the developments and infection rates in Sweden, partly with bewilderment, partly with horror. The Swedish strategy has indeed differed from that of the neighbouring Nordic countries, or even any other country in the world. Fatalities per capita in Sweden are at the time of writing more than ten times higher than in Finland (European Centre for Disease Prevention and Control, 2021), its easterly neighbour. Proposed explanations for this discrepancy have ranged from variations in population sizes and densities, immigration patterns and routes by which the virus was first introduced (Claeson and Hanson, 2021). Claeson and Hanson have suggested that the reason lies in how the Public Health Agency of Sweden (Folkhälsomyndigheten) embarked on a de-facto *herd immunity* approach, allowing the disease to be transmitted comparatively unrestricted.

Sweden's unique approach has also been covered in the well-publicised book *Flocken* ("The Herd") (Anderberg, 2021), and even by the former president of the USA, Donald Trump (Reuters, 2020).

Herd immunity is reached in a community when enough people are immune against a disease to isolate those who are infectious from those who are not (Fine, Eames and Heymann, 2011). When enough people in a bounded population are immunised against Covid-19, it becomes statistically unlikely for anyone carrying the disease to interact with someone susceptible to infection. At that point, the viral spread of infection will slow as the virus fails to infect new hosts at a rapid enough pace.

Sweden often ranks as one of the countries of the world where trust in authorities is the highest (Ortiz-Ospina and Roser, 2016). However, Sweden was also one of the countries that was most afflicted by incidences of narcolepsy in children and young adults following the campaign to vaccinate against the H1N1 (swine flu) pandemic in 2009 (Wijnans *et al.*, 2013), which still rests as a haunting memory among Swedes. Hundreds of people in Sweden suffer from this chronic disease as a consequence (Socialstyrelsen, no date).

Sweden's remarkable strategy, paired with the historically high trust in authorities and the consequences of H1N1 (swine flu) vaccination campaign are all factors that make Sweden a special case in terms of fighting Covid-19. On the one hand, high trust in authorities is likely to increase vaccination rates. On the other, memories of narcolepsy could cause decreased vaccination rates. Therefore, this study takes a close look on to which extent vaccine hesitancy exists in the nation, and which factors cause it.

Additionally, a brief note regarding selective data omission will be addressed to confirm the thesis' scope of interest. Due to the imminent risk of circular referencing, it was deemed uninteresting to create a model that predicts vaccine intentions based on an individual's opinions on the vaccines themselves. Hence, it was decided to eliminate variables that relate strictly to actual vaccination and instead let the model predict vaccine intentions based on socio-demographic factors and opinions on other topics.

1.4. Scientific relevance

Due to the novelty of Covid-19 and its associated vaccines, very few studies have been conducted on people's opinion towards either. One notable study by Dror *et al.* (2020) aimed to map vaccine intentions on the basis of socio-demographic factors as well as opinions and experiences with vaccines. As, for the purposes of this thesis, vaccine opinions were excluded from the analysis, the overlap is limited.

The findings of this thesis can prove effective in closing the gap between risk perception, conspiracy theory belief and vaccine hesitancy using a quantitative method. Additionally, no quantitative study on Covid-19 vaccination intention has been published with Swedish respondents, rendering this study locally unique and useful. Considering Sweden's unique approach and its history of trust and vaccine side-effects, the results are of international relevance as well.

To the best of the authors' knowledge, only one study has so far been published on the topic of Covid-19 vaccination and risk perception (Caserotti *et al.*, 2021). It did not, however, place any importance on the targeting; to whom the risk perception applies (Sjöberg, 2000a). This gap in current empirical theory: how perceptions of risk of hazard from Covid-19 depends on to whom the risk applies, as well as the implications on vaccine intentions of the former, is intended to be filled by this study.

Cross-referencing theory on risk perception and conspiracy theory belief lends a perspective where research on one informs and explains the same about the other, which creates a rich backdrop against which to analyse the findings from this thesis' empirical data. The study could provide inspiration for subsequent research on the interplay between risk perception and conspiracy theory belief and how that interplay affects individuals' real-life decision making.

1.5. Practical relevance

In order to reach the coveted state of herd immunity it is estimated that two thirds of the population need to be immune (Randolph, 2020). Letting that large a share of any population acquire natural immunity through infection would lead to a sharp increase in excess mortality and heavy, unnecessary loss of life. The only way to reach the herd immunity threshold in a relatively safe and humane way is through mass vaccination.

This goal becomes unreachable if too many people display enough hesitancy towards the various vaccination alternatives to deny receiving them, thus rendering efforts to maximise vaccine demand and uptake an important priority for various disease control agencies and authorities around the world. To be successful in this endeavour, it is important to be effective and efficient when communicating with the general public. Ensuring effective targeting, that the proper messages are being communicated to the right people, is also crucial to increase the probability that people accept the message.

The findings of this thesis, in terms of identifying key socio-demographic and attitudinal determinants of Covid-19 vaccine intentions could assist relevant authorities in creating and delivering effective campaigns for increased vaccine uptake. To the knowledge of the authors, no research has been published to date attempting to build a model aimed to detail and, crucially, predict who might be vaccine-hesitant. The model could provide important aid in mapping vaccine intentions on a large scale based on previously known factors. The authors have been in contact with the Public Health Agency of Sweden which encouraged the study and showed interest in any potential results. Concretely, the results could deepen the agency's understanding of why people are hesitant in the face of a Covid-19 vaccine and which people are most hesitant. In extension, this may lead to more efficient communication in mitigating said hesitancy.

1.6. Delimitations

1.6.1. Vaccine hesitancy definition

There is no clear consensus in the scientific community on how to classify the varying levels of doubt, unwillingness and scepticism regarding vaccines that can surface in people. Additionally, as the majority of previously conducted research regards the vaccination of infants there is a lack of established terminology for adults regarding vaccination of themselves (Nichter, 1995).

To correspond with the format of the study's collected data, a definition of the term vaccine hesitancy (MacDonald, 2015) was adopted that could easily be translated from a Likert scale to binary form. Thus, vaccine hesitancy is here defined as anyone who is unlikely to get themselves or their child vaccinated. Conversely, anyone willing to get vaccinated, albeit anywhere between certain and only just, is defined as non-hesitant.

1.6.2. Study overview

To answer the research question, a quantitative study was conducted on survey data, where 1,016 Swedish respondents were asked about their opinions on Covid-19, their opinion on several societal issues and basic demographics. On these data, statistical tests are carried out and interpreted.

Concretely, using significance tests, linear and binary logistic regressions, this study aims to devise a model that, as accurately as possible, can predict a person's vaccine intentions from a set of socio-demographic and attitudinal factors.

UNDERSTANDING VACCINE HESITANCY

This review of previous research justifies any assumptions made by the authors during the conduction of the study and create a basis for analysis and discussion. How decision making is affected by heuristics and risk perception, how conspiracy theories have spread during the pandemic and their effect on vaccine intentions and, lastly, some insights from previously conducted similar studies provides a theoretical framework within which results can be analysed. In the end of this chapter, the hypotheses tested in this thesis are developed.

2.1. Definitions and importance of vaccine hesitancy

Vaccination is regarded to be possibly the greatest public health achievement in history (Center for Disease Control, 1999). It has contributed to the reduction in mortality of various infectious diseases, and is credited with the worldwide eradication of smallpox. In order to achieve successful reduction in incidences of vaccine-preventable diseases, a high uptake level of vaccines is crucial. Not only does vaccination provide direct protection for vaccinated individuals, it also protects unvaccinated members of the community through the aforementioned phenomenon of herd immunity (Fine, Eames and Heymann, 2011). In order to enable authorities to create effective vaccination programmes, it is imperative for them to understand vaccine hesitancy so that they can address and prevent it (Dubé *et al.*, 2013).

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2.2. Rationality and risk perceptions

Rationally, one would consider the case for vaccination to be obvious. A world of scientists agrees; vaccines have served humanity well in improving public health. When Edward Jenner in 1796 inoculated 8-year-old Jamie Phipps with matter from the cowpox lesions of a young dairymaid, he began a fight that would culminate almost two centuries later with the eradication of smallpox (Riedel, 2005). It can rightly be considered to be one of the crowning achievements of mankind (Fenner, 1988). Why then is it so, that some people choose to abstain from vaccination?

Hobson-West (2003) detailed the idea that people reject vaccines when they are uninformed of the vaccines' benefits but, subsequently, rejected it on the grounds that misinformation and heuristic risk assessment play greater roles in the vaccination decision than facts. As an example: consider the parents of young Jamie Phipps faced with the decision to allow their son to be the first ever person to be vaccinated. How Jenner persuaded the family to accept this radical new treatment on a healthy child is unknown, but it is certain that he did not inform them about the medicinal, physiological and epidemiological facts regarding the procedure, as none of those were known at the time. In fact, the germ theory of disease were not yet discovered by this time, nor were the existence of viruses (Riedel, 2005). More likely, Jenner explained best he could that he might hopefully spare the child from the possibility of dying from smallpox and simply asked them to trust him. In that moment, neither facts nor rational risk assessment could have aided the parents in their decision; hope and faith probably convinced them in the end.

Kahneman's seminal work *Thinking, Fast and Slow* (2012) developed the idea of two cognitive methods used for different sorts of decision making. System 1 is the fast, heuristic, and emotional process which "operates automatically and quickly with no sense of voluntary control" and System 2 is the slow, informed, and rational system which "requires attention to the effortful mental activities that demand it, and is associated with the subjective experience of agency and choice" (Kahneman, 2012, p. 21). If vaccine hesitancy stems from lacking knowledge about the risks of either having or not having a vaccine then, reasonably, increasing vaccination rates would be a matter of stimulating System 2; and endorsing rational thinking by endowing people with the necessary parameters to calculate risk. However, as Luz *et al.* (2020) argued, it is more likely that system 1 plays a major role when deciding on vaccination.

The story of a child being harmed by vaccination has a strong emotional effect on humans: articles about the retracted paper that used falsified data to allege measles, mumps, and rubella (MMR) vaccines to cause autism in children (Wakefield *et al.*, 1998) caused parents, long after the article was published, to be concerned about the vaccine (Smith, Yarwood and Salisbury, 2007). The mere appearance of smoke seems to be enough to activate System 1 in people and instil fear of a fire that never was.

Returning to 18th century Gloucestershire, where a family is contemplating whether a child should be inoculated using cowpox matter. In the 18th century, the probability of outcomes for a cure never tried before were not easily calculated by the family of an uneducated gardener. Much like vaccine-hesitant people feel today, the situation was *uncertain*.

2.2.1. *Uncertainty, heuristics, and biases*

First proposed by Knight a century ago, there is a distinction to be made between *risk* and *uncertainty* (1921). Risky situations are those where alternatives are known, and their consequences calculated; uncertain ones do not allow for such calculations. Mousavi and Gigerenzer (2014) claimed that while risk is prevalent at the roulette table, it is hardly found anywhere else in life. How then do people make decisions in a world so marked by uncertainty? They make inferences about past experiences and apply them to new settings by using heuristics (Gigerenzer and Goldstein, 1996). These rules of thumb often serve people well in uncertain situations; they can often solve complex uncertain situations better than calculation.

How well heuristics perform in uncertain situations is a nevertheless a contentious issue. A famed exchange between Gigerenzer (1991, 1996) on one side and Kahneman and Tversky (1996) on the other details this conflict, without reaching a conclusion. As it stands, the research community is divided.

The school of thought known as the *heuristics and biases* program holds that heuristics may also lead to biases and systematic errors. Kahneman and Tversky phrase the relationship between heuristics and errors in the following way:

In making predictions and judgments under uncertainty, people do not appear to follow the calculus of chance or the statistical theory of prediction. Instead, they rely on a limited number of heuristics which sometimes yield reasonable judgments and sometimes lead to severe and systematic errors. (Kahneman and Tversky, 1973, p. 237)

The heuristics and biases program was established with an article on judgment in uncertain situations (Tversky and Kahneman, 1974). Here, the authors described three distinct heuristics: 1) representativeness; 2) adjustments of anchoring and 3) availability of instances, each with their respective set of biases. The first heuristic, representativeness, is the use of stereotypes to assess if a person or an object belongs to a population. The second, adjustments of anchoring, is where exposure to an initial number serves a reference point to judge other numbers.

The third is the most pertinent of the three for this thesis. Availability is used when assessing the plausibility of a particular event, such as getting infected with Covid-19, or suffering from side-effects of a vaccine. A person using the availability heuristic calculates the likelihood that something may happen by assessing the ease with which they can retrieve an association to it (Tversky and Kahneman, 1973). An application of using this heuristic could be assessing the number of people suffering from the side-effects vaccine by taking into consideration the number of news articles one has read on the subject – a way of reasoning that can be biased.

The availability bias can explain what happened in the 1990s, in the wake of the infamous study by Wakefield *et al.* (1998), which alleged the MMR vaccine to cause autism in children. Already in Combs and Slovic's (1979) study of how newspapers report different causes of death, it was established that the bias in news reporting towards violent, catastrophic causes of death is reflected in the perceived frequencies of causes of death. As the authors describe it, "[a] substantial part of our experience comes directly, through various forms of media exposure. If media reporting is biased, then much of our experience will be biased, too".

Slovic and colleagues have added a fourth heuristic besides Kahneman and Tversky's original three: *affect* (Finucane *et al.*, 2000; Slovic and Peters, 2006; Slovic *et al.*, 2007). A pioneer in the research on affect, and its importance for decision making is Zajonc (1980), who claimed that the initial affective reaction guides information processing and judgement. While people often rationalise their feelings after the fact, it is more likely that choices and opinions are justified well after the feeling towards the subject was established. This has fundamental importance for the affect heuristic and its relation to risk perception.

Although, as previously established, much of the world is more aptly described in terms of *uncertainty* rather than *risk*, this does not hinder people from contemplating the risk and

benefit of situations.¹ In the world of textbooks about business (and at the roulette table) risk and benefit are positively correlated – taking high risks yields correspondingly high returns. This positive correlation is not found in people’s minds (Finucane *et al.*, 2000). For many hazards, the relationship is, on the contrary, inversed. Finucane *et al.* (2000) show that smoking, alcoholic beverages and food additives are seen as items of high risk and low benefit. Conversely, vaccines, antibiotics and X-rays tend to be seen as high in benefit and relatively low in risk. What causes this relationship is the individual’s feelings towards a hazard; the affect heuristic states that when an activity is liked, risks are perceived to be low and benefits high. If the activity is disliked, evaluations of the relationship between risk and benefit are opposite (Alhakami and Slovic, 1994). Thus, people do not consider the riskiness of an event solely based on a rational evaluation, but on the feelings experienced. One important finding of Finucane *et al.* (2000) is that risk perception can be manipulated: changing people’s perception of one attribute (such as increasing benefit) led to an inverse effect on the other (decreasing risk).

One of the strongest emotional responses is that of dread, which has been proven to instil negative affect in individuals, causing them to perceive the benefits of an event as less than what they are and the risk to be higher than it really is (Slovic and Peters, 2006). Combining dread with the fact that a similar set of risks almost always show positively correlated perceptions (Sjöberg, 2000a), people could reach a nearly incapacitated state if the dread of both vaccination and getting sick amplifies the perceived risk of both.

Additionally, novelty creates negative affect through feelings of uncertainty and lack of control (Slovic and Peters, 2006). People’s tendency to favour the known before the unknown has been researched within prospect theory (Kahneman and Tversky, 1979, 1984; Thaler, 1980, 1985). One of the central tenets of these studies is the term *loss aversion*, meaning that people in general weigh losses heavier than gains. A person considers the current situation to be the reference point against which any changes are contrasted – both good and bad. Since people tend to be loss averse, they prefer those options where losses are minimised rather than those where gains are maximised. Equal outcomes are valued differently depending on the framing of them, *loss-framing* (emphasising losses) and *gain-framing* (emphasising gains) (Kahneman and Tversky, 1984).

¹ For the purpose of this study, people’s action in uncertain situations will be assumed to be governed by their perception of risk.

Ritov and Baron (1992) have suggested that it specifically is the action of changing the status quo, potentially for the worse, that is daunting: people prefer harmful *inaction* to equally, or even slightly less harmful *action*. This irrationality is caused by what the authors call *omission bias*. In a study where subjects were confronted with the option to vaccinate or not vaccinate, Ritov and Baron found that people prefer to avoid taking responsibility for actions that could have adverse outcomes.

Subjects are reluctant to vaccinate when the vaccine can cause bad outcomes, even if the outcomes of not vaccinating are worse. [...] Some subjects make an absolute rule, and will accept no risk whatsoever that they will 'cause' a death even in return for complete elimination of the risk of death from other causes. (Ritov and Baron, 1990)

Findings by Sjöberg (2000a) on the systematic deviation in people's risk perception serve both as an indication of how people perceive risk in general and as one possible explanation for vaccine hesitancy: people tend to overestimate small risks and underestimate large ones. Thus, it makes sense that people perceive the comparatively small risks of vaccine side effects to be similar to the larger risks of falling ill from Covid-19. Additionally, people tend to perceive artificial, man-made or unnatural risks as higher and more hazardous than natural ones (Sjöberg, 2000b). As Kahneman put it in an interview in the Financial Times on the 7th of May 2021:

This idea of somebody dying from a vaccine is really almost intolerable. The idea of somebody dying from a disease [...] that's natural. That's the world. (Harford, 2021)

2.2.2. Risk denial

Additionally, it seems as if risk perception is heavily influenced by against whom the risk is targeted (Sjöberg, 2000a, 2003a, 2003b). Sjöberg found that people consistently evaluate hazardous events to be more likely to occur to an unspecified, random individual than to oneself or a family member. Sjöberg (2000a) coined the term *risk denial* to denote this effect, which is defined as the difference between the two perceptions, or the value of the risk to the general public with the own risk subtracted.

Thus, risk denial is neither a measurement of whether an individual is prone to perceive risks as more or less severe than they are, nor does it provide insights into whether the subject is personally risk prone or risk averse. It solely shows the level at which an individual considers themselves to be more or less in harm's way from a potentially hazardous situation or event than a random member of the general public.

Sjöberg (2000a, 2003b) has presented empirical findings that show that a crucial factor in determining whether a hazardous situation or event will be met with high or low levels of risk denial is an individual's perceived level of control of the situation. Specifically, if a person believes that they hold significant power to prevent a potential hazard from realising at all or, if unavoidable, they feel they have the means of mitigating its adverse consequences, risk denial is shown to be significantly higher. Concretely, this means that when people perceive themselves to be able to deal with a potential hazard, they tend to consider others to be less equipped to do the same. For example, denial tends to be high regarding matters of personal health which, more or less, depend on individual choices such as smoking or alcoholism (Sjöberg, 2003a; Peretti-Watel *et al.*, 2007).

People's propensity to think that everyone else is less equipped to prevent or mitigate harm from any given situation than themselves has been empirically proven by Svenson (1981). He reached the conclusion that people generally tend to consider themselves considerably more skilled and less likely to have an accident than a self-estimated average. Several years later, Kruger and Dunning (1999) would publish their now famous paper detailing the link between incompetence and lack of awareness of one's own skills.

Kruger and Dunning showed empirically that the skillset needed to excel at something coincides with the skills needed to assess someone's competence at the very same thing. Hence, it is impossible to know the extent to which one is incompetent at something before some skill and experience are acquired with it. Following this reasoning, the overconfidence that creates the risk denial presented by Sjöberg (2000a, 2003b) shows signs of the Dunning-Kruger effect. This is evident as the respondents are unlikely to have skill and experience with every, or even any, of the hazards surveyed and yet risk denial was consistently shown.

However, for events more akin to *force majeure* such as car accidents or natural disasters, risk denial tends to be significantly lower than for events over which people feel that they wield own control. This can be interpreted as a notion that when people are robbed of agency over a situation, they consider the level to which they are equipped to prevent and mitigate a hazard to be closer to the low levels that people in general are likely to have.

Risk denial can be measured along two different dimensions to produce different sets of insights: either an individual's perspective on several hazards, or a population's perspective on individual hazards.

Measuring the first dimension, determining the risk denial of individuals on several different hazards, informs on people's general tendencies regarding risk denial. As people with a high levels of risk denial consider themselves safer than others, they are likely to be more tolerant of a higher degree of risk (Sjöberg, 2003a). This effect has, for example, been shown to be visible on hazard-prone workplaces, where workers displaying high risk denial show little worry as risk of hazards increase. Knowing the general risk denial of a population can, thus, grant understanding regarding their risk tolerance. Conversely, determining the risk perception of a population specific to a single hazardous situation or event; the second dimension, can inform on the level of control people perceive when faced with that particular hazard. This can, in turn, grant understanding of how to influence people's feelings towards said hazard using information campaigns for instance, if need be.

The systematic difference between people's perception of risk for themselves and for the general population respectively, is shown to have implications for opinions on public policy (Sjöberg, 2003a). Whilst risk denial may be interpreted as a general disregard for risk, it can also be interpreted as an altruistic concern for the general public. Should a hazard show negative risk denial for an individual, meaning they perceive their own risk to be even higher than that of people in general, it is likely that they would take action to increase their control and mitigate the risk. However, in the normal case of positive risk denial, people seem to be content with risks being mitigated by someone else.

Sjöberg (2003a) argued that the accepting attitude towards the Swedish government's monopoly on alcoholic beverages lies with the fact that whilst each individual is likely to consider themselves safe from falling into alcoholism, should the narrow regulations be lifted, individuals are equally sure that the general public would be unable to handle it. Thus the regulations can be considered to be a necessary evil.

Conclusively, it seems that people find confidence and agency in a sense of control of any given situation, a confidence that lets them consider other people to be less apt at dealing with said situation than themselves. When one is berobbed of control, risk denial shrinks, which indicates a loss of confidence and calm. That sensation would cause anxiety and dread, triggering a negative affect heuristic which sets two impulses in motion in the person: 1) a need to regain control and; 2) a shutdown of system 2 with a simultaneously increased reliance on system 1 (Slovic and Peters, 2006; Kahneman, 2012).

The combination of these two impulses: a need for control, and a reduced capacity for rational and logical reasoning, has been known to make people susceptible to conspiracy theories (van Prooijen and Acker, 2015; Ballová Mikušková, 2018). Conspiracy theories have flourished during the Covid-19 pandemic, acting as a vessel for disinformation and distrust. The impact of the conspiracy theory spread on people's vaccine intentions will be presented in the following chapter, acting as an in-practice study of negative affect heuristic on a societal scale.

2.3. Conspiracy theories in times of Covid-19

2.3.1. Tying conspiracy theory beliefs to vaccine hesitancy

A *conspiracy* is defined as a secret plot between two or more powerful actors, usually with a purpose to enrich or empower themselves by withholding information from the general public (Keeley, 1999). A *conspiracy theory* is an attempt to explain or rationalise social, scientific, or political events by blaming them on alleged conspiracies. Finding a rational explanation can be seen as the first step towards taking back control under uncertain circumstances, thus reducing the negative affect caused by the dread and novelty of a new and uncertain situation (Slovic *et al.*, 2007; van Prooijen and Acker, 2015).

Romer and Jamieson (2020) demonstrated a link between conspiracy beliefs and vaccine hesitancy through an analysis of two surveys of the same population at different stages of the pandemic: one in March 2020 and one in July the same year. They measured propensity to take necessary precautions such as mask-wearing, social distancing and vaccination against ideology, media preferences, conspiracy theory beliefs and perceived threat level from Covid-19. Their findings showed a statistically significant link between holding conspiracy theory beliefs and an unwillingness to get vaccinated. Interestingly, the conspiracy theories in which anti-vaccine respondents reportedly believed did not necessarily relate to Covid-19 in particular, but dealt with a wide variety of topics, suggesting that a susceptibility to some conspiracy theories correlates to being susceptible to others.

Additionally, since two consecutive surveys were conducted, a causal relationship was established between conspiracy beliefs and subsequent reluctance toward vaccination and precautionary measures. Adding variables in the second survey that were absent from the

first, Romer and Jamieson (2020) demonstrated that holding conspiracy beliefs early in the pandemic predicted an increase in hesitancy towards recommended actions later.

Two earlier studies, conducted by Jolley and Douglas (2014), investigated more granularly whether conspiracy theory belief and exposure to information about vaccination significantly impacted vaccine decisions. The first study revealed a significant, negative relationship between endorsement of conspiracies related to anti-vaccination sentiments and vaccine intentions. Mediators included mistrust in authorities, feelings of powerlessness and perceived danger of vaccines.

The second study exposed participants to reading material that either refuted or supported anti-vaccination conspiracy theories with an additional, neutral control group. Through the same mediators as in the first study, an exposure to material supportive of conspiracy theories led to a decline in vaccine propensity compared to that of the subjects in the other two groups.

All things considered; the assumption that belief in conspiracy theories correlates with vaccination hesitancy is considered to be valid for the purposes of this study.

2.3.2. Conspiracy theories in the time of Covid-19

As conspiracy theories flourish in times of uncertainty and disruption, Covid-19 has provided a fertile breeding ground. This section will provide an overview as to why conspiracy theories have been spread since the outbreak of the pandemic, and why so many people that were not endorsing them before have become more accepting (Motta, Stecula and Farhart, 2020). As conspiracy theory belief is directly related to vaccine hesitancy (Jolley and Douglas, 2014; Romer and Jamieson, 2020), establishing the spread of the former will, followingly, inform on the spread of the latter.

The European Radicalisation Awareness Network produced a report earlier this year outlining the threats posed by conspiracy theories and right-wing extremism which claimed the following regarding the current pandemic:

The outbreak of the COVID-19 pandemic acted as a catalyst for conspiracy theories. Given that the virus is invisible, corresponding conspiracy beliefs flourished, as in every period of crisis. Extremist groups capitalised on the opportunity by offering simple solutions and answers to highly complex issues with the aim to advance their agendas and recruit followers. (Farinelli, 2021)

Firstly, conspiracy theories are popularly used as ways to explain otherwise incomprehensible events or to grant explanations under conditions of great uncertainty (van Prooijen and Jostmann, 2013). The large number of unknown factors early in the pandemic: the rates of infection and mortality, the origins of the virus, the impact the disease would have on everyday life and how governments around the world were addressing the crisis, led to the development of Covid-related conspiracy theories (Motta, Stecula and Farhart, 2020).

This has been effectively exploited by people looking to spread anti vaccine information and content online, as shown by Grant *et al.* (2015) in their study on the differences between websites promoting vaccine-positive and negative notions. They highlight that whilst websites devoted to increase vaccine uptake are typically reluctant to make sweeping statements on matters that are scientifically unproven, and insist on being frank about the limitations of their own knowledge, the anti-vaccine sites offer confidence and direct answers. As they are unrestricted by truth and scientific best practice, they can offer a more attractive service to people who are uncertain about vaccines and looking for answers.

As previously stated, uncertain situations can lead to the feeling of lack of control of one's fate and situation, a sensation that has also been linked to a propensity to turn toward conspiracy theories (van Prooijen and Acker, 2015). Similarly, lacking political agency and belonging; the perception that one's voice is not being heard and that the authorities do not care, has been shown to make people more prone to conspiracy theories (Goertzel, 1994). These findings fit well with the notion that mandating vaccination in children, rather than leaving the final decision with parents, has caused controversies and occasional dips in vaccine uptake rates (Lantos *et al.*, 2010).

Similarly, a classic setting for conspiracy theories is when a seemingly insignificant or coincidental event gets massive ramifications (Leman and Cinnirella, 2013). Since the scientific explanation of the origins of Covid-19 is a naturally occurring interaction between different animals at Chinese wet market, conspiracy theories quickly developed that claimed the release of the pathogen was deliberate. It seems hard for people who endorse and support conspiracy theories to accept that something as impactful as Covid-19 was accidental in its origin, rather than sinisterly orchestrated.

The more or less complete lockdowns of society due to the pandemic contribute to another condition that helps conspiracy theories to spread: people becoming bored (Brotherton and

Eser, 2015). Limited social interactions, lack of exposure to people outside the immediate family or friend group, and no possibilities of physical activity frees up plenty of time for people to conspire against an unknown enemy.

2.3.3. Who believes in conspiracy theories?

Returning to Rosenbaum (2021) and her seemingly informed hairdresser who surprisingly turned out to be strongly vaccine-hesitant, one cannot help but wonder what socio-demographic factors there are coming into play in conspiracy theory adoption – both in general and pertaining to vaccine hesitancy in particular.

To date, some research has been conducted exploring to whom conspiracy theories seem to appeal. A compilation study of historical survey data concluded that “conspiracy believers were more likely to be male, unmarried, less educated, have lower income, be unemployed, be a member of an ethnic minority group, and have weaker social networks” (Freeman and Bentall, 2017, p. 10).

Research into political sympathies and their relation to conspiracy belief (van Prooijen, Krouwel and Pollet, 2015) shows that people with socially conservative and right-wing political sympathies seem less likely to want to get vaccinated. Consistent with these findings, extreme ideology, and especially right-wing affiliations, were proven on a Swedish sample to correlate with propensity to believe in conspiracy theories (Krouwel *et al.*, 2017). In extension, political sympathies and their ties to conspiracy theories about science have been studied by Goertzel (2010). He describes how genetically modified food, vaccine and climate change are common topics among conspiracy theorists.

Remembering that conspiracy theory belief is directly correlated to vaccine hesitancy (Jolley and Douglas, 2014; Romer and Jamieson, 2020), drawing corresponding conclusions from the data surveyed for this thesis can inform who might be more likely to be vaccine-hesitant from a socio-demographic perspective. Even though the previously presented circumstantial and psychological factors that affect conspiracy theory belief might be more addressable and mitigatable than socio-demographic factors, any additional explanation of statistical variance is worth establishing.

Having established a theoretical framework of decision making based on heuristics, risk perception, and risk denial, as well as theory on conspiracy theories to inform socio-demographic tendencies of vaccine-hesitant people, a final chapter will cover the research that has been previously conducted on Covid-19 vaccine intentions.

2.4. Previous research on Covid-19 intentions

As Covid-19 has only existed for a little over a year at the time of writing, very few studies have so far been conducted to explore people's intention to vaccinate against the virus. The previously mentioned study by Romer and Jamieson (2020) showed that people with a tendency to endorse conspiracy theories were more likely to abstain from vaccination. On a similarly polarising note, Allcott *et al.* (2020) found that propensity to adhere to authority health guidelines, including getting vaccinated, followed partisan lines in the USA, indicating that Republicans are more hesitant towards the vaccine than Democrats are.

One study was found with a similar purpose to this one, which identified the demographic factors and primary reasons of people's reluctance to accept the Covid-19 vaccine (Dror *et al.*, 2020). They found three demographic factors that had a statistically significant impact on the likelihood of a person accepting the Covid-vaccine: 1) having children, negative correlation; 2) with a positive correlation, being male; and 3) perceiving a personal health risk from the disease, also making an individual more prone to vaccinate. Furthermore, of those of their respondents that expressed concerns about being vaccinated, 76 percent did so out of safety concerns surrounding the vaccine itself, 13 percent doubted the efficacy of the vaccine and 11 percent claimed to believe the disease not to have a severe enough impact to justify getting vaccinated.

One study in Italy found that young people showed greater acceptance of having a vaccine against Covid-19 than older people do (Caserotti *et al.*, 2021). This study also tested whether residents of regions more severely afflicted by the pandemic were more inclined to have a vaccine but found no such correlation.

The SOM Institute of the University of Gothenburg conducted a survey on 6,000 people on opinions in Sweden regarding the pandemic with regards to respondents' position on the GAL-TAN scale. The position on this scale, where GAL stands for "green, alternative and libertarian" and TAN for "traditional, authoritarian and nationalist" (Hooghe, Marks and Wilson, 2002), was found to coincide with perceptions of the performance of authorities

(Bjereld and Demker, 2020). People who positioned themselves as TAN, and thereby sceptical towards global trade and international cooperation, were also more critical against leading figures of society, which could have implications for vaccine hesitancy.

2.5. Hypothesis generation

2.5.1. H1

In line with previous research into conspiracy theories and intentions towards having a vaccine against Covid-19, this study will control whether gender has explanatory power on vaccine hesitancy. Previous empiric studies are inconclusive. Freeman and Bentall (2017) found that men are more susceptible to conspiracy theory beliefs, Caserotti *et al.* (2021) could not prove that gender was a significant factor in determining Covid-19 vaccine hesitancy in Italy. Lastly, Dror *et al.* (2020) found women to be more vaccine-hesitant than men. As findings have been inconclusive on the effect of gender, the study will test whether any significant difference exists.

H1: Gender affects Covid-19 vaccine hesitancy.

2.5.2. H2

Based on empirical findings by Dror *et al.* (2020) and Caserotti *et al.* (2021) on Covid-19 vaccine intentions, this study will control whether age has explanatory power over vaccine intentions. Due to conflicting findings from the two studies, where Dror *et al.* found no statistically significant correlation between age and vaccine hesitancy but Caserotti *et al.* did find a positive one, this study will test whether any significant difference exists in the studied sample.

H2: Age affects Covid-19 vaccine hesitancy.

2.5.3. H3

In line with research conducted on whether residents of different regions of Italy that were struck by the pandemic with varying degree of severity shared different levels of Covid-19 vaccine hesitancy (Caserotti *et al.*, 2021), this study will investigate whether the geographical location in Sweden has any explanatory power of vaccine intentions will be controlled.

H3: Region of residency affects Covid-19 vaccine hesitancy.

2.5.4. H4

As Freeman and Bentall (2017) found that unemployed people are more likely to engage in conspiracy theory belief, and as these beliefs are deeply associated with vaccine hesitancy (Jolley and Douglas, 2014; Romer and Jamieson, 2020), this study will test if jobless people are more susceptible to vaccine hesitancy than others.

H4: Unemployment affects Covid-19 vaccine hesitancy.

2.5.5. H5

According to findings by Freeman and Bentall (2017), people with lower income are prone to believe in conspiracy theories. As such beliefs are deeply associated with vaccine hesitancy (Jolley and Douglas, 2014; Romer and Jamieson, 2020), this study will test if low-income earners are more susceptible to vaccine hesitancy than others.

H5. Low income affects Covid-19 vaccine hesitancy.

2.5.6. H6

Drawing from the empirically established links between vaccine hesitancy and socially conservative, far-right political views (Allcott *et al.*, 2020) coupled with evidence that the same tendencies are present for holding conspiracy theorist views (van Prooijen, Krouwel and Pollet, 2015; Krouwel *et al.*, 2017), this study will test whether socially conservative people are more vaccine-hesitant.

H6: Socially conservative and right-wing political affiliations affect Covid-19 vaccine hesitancy.

2.5.7. H7

As it has been shown that the availability heuristic and the affect heuristic influence people's perception of risk (Combs and Slovic, 1979; Alhakami and Slovic, 1994; Slovic and Peters, 2006), it can be inferred that people who have seen content in media that exaggerates the risks of vaccination are more prone to vaccine hesitancy.

H7. Exposure to anti-vaccine content in social media affects Covid-19 vaccine hesitancy.

2.5.8. H8

As Goertzel (2010) described in his study, climate change is one of the major topics that engage conspiracy theorists. As belief in one conspiracy theory is likely to be correlated with other, seemingly unrelated ones, e.g. vaccine hesitancy (Goertzel, 1994; Romer and Jamieson, 2020), people who oppose actions to mitigate climate change are likely to be more hesitant towards vaccines than people who agree with the scientific consensus. For this reason, the study will test the correlation between opposing such actions and vaccine hesitancy.

H8. Opposing Net Zero carbon emissions affects Covid-19 vaccine hesitancy.

2.5.9. H9

In line with findings from Dror *et al.* (2020), who empirically showed that parents were more likely to be vaccine-hesitant than people without children with statistical significance, this study will control for whether being a parent holds any explanatory power over vaccine intentions.

H9. Having small children (age 0-4 years) affects Covid-19 vaccine hesitancy.

2.5.10. H10

The soft attitude from risk-denying people towards government regulations regarding public health (Sjöberg, 2000a) indicates that regulation can be perceived to be necessary to the general public, albeit unnecessary to oneself. This could be argued to act as a mediator between risk denial and vaccine hesitancy. A person with a high level of risk denial could argue that even though they comprehend the need for people in general to get vaccinated, as others probably are not as able to take necessary preventive and mitigating actions against Covid-19, the need to get the vaccine is negligible as the perceived own risk is low. Therefore, this study will control whether risk denial, being infected, and developing severe Covid-19 being the relevant hazardous situation, holds any explanatory power over vaccine intentions.

H10. Risk denial affects Covid-19 vaccine hesitancy.

2.5.11. H11

The survey made by the SOM-institute found that people who positioned themselves as TAN (Bjereld and Demker, 2020) were more critical towards authorities and their handling of the pandemic. People classified as TAN are more sceptical towards global trade and prefer

domestic goods (Hooghe, Marks and Wilson, 2002). This study will test whether these views are reflected in vaccine hesitancy.

H11: Views on imported goods, services, and workforce affect Covid-19 vaccine hesitancy.

2.5.12. H12

As shown by Goertzel (1994), a feeling of distrust, disconnection, and discontent with the government and authorities can increase the propensity to believe in conspiracy theories. As conspiracy theory beliefs are deeply associated with vaccine hesitancy (Jolley and Douglas, 2014; Romer and Jamieson, 2020), this study will test if a disapproving opinion towards the government, its agencies, and leading voices of society holds any explanatory power over vaccine intentions.

H12. Disapproval of authorities affects Covid-19 vaccine hesitancy.

DATA

In this chapter, the data analysed in this study is explained. How the survey was conducted is described, as is the selection process of which respondents are included in the analysis. The section provides descriptive statistics of the dataset. Finally, the limitations of the sample are discussed.

3.1. Survey

One of the authors is employed by the strategic communications consultancy Kekst CNC. Since the outbreak of the pandemic, the firm has monitored public opinions regarding several different issues, such as the authorities' handling of the pandemic, concern for personal and public health, and intention to vaccinate Covid-19 (Kekst CNC, 2021). Editions of the survey have been presented in publications like Politico (Laurenz, 2021) and Bloomberg (Morales, 2020). For the latest survey (until now seven), the authors cooperated closely with Dr Tom Lubbock of the University of Oxford, and James Johnson, who are both Senior Advisors to Kekst CNC's London office, in developing questions that could help explain the demographics and opinions behind vaccine hesitancy. Collaborating in this way has given the authors access to data that, in terms of size and quality, surpasses what could have been acquired through other measures of sampling available.

The fieldwork of the survey took place between 11th and 21st February 2021, during which time data were collected through a poll on the Internet. See Appendix for full disclosure of the questions and corresponding response alternatives that were asked. The sampling frame consisted of web panellists; quotas and weights were put on gender, age, and region for each country for a representative sample of the population.

3.2. Disclosures

The survey data collected through the Kekst CNC Covid-19 Opinion Tracker was willingly given and devoid of personal details attached to an individual set of answers, rendering it impossible for the authors to access the identity of any given respondent. As no personal information was stored or treated, the study is deemed ethically sound and in line with GDPR. No data can be used to single out an individual respondent.

3.3. Survey response and respondent selection

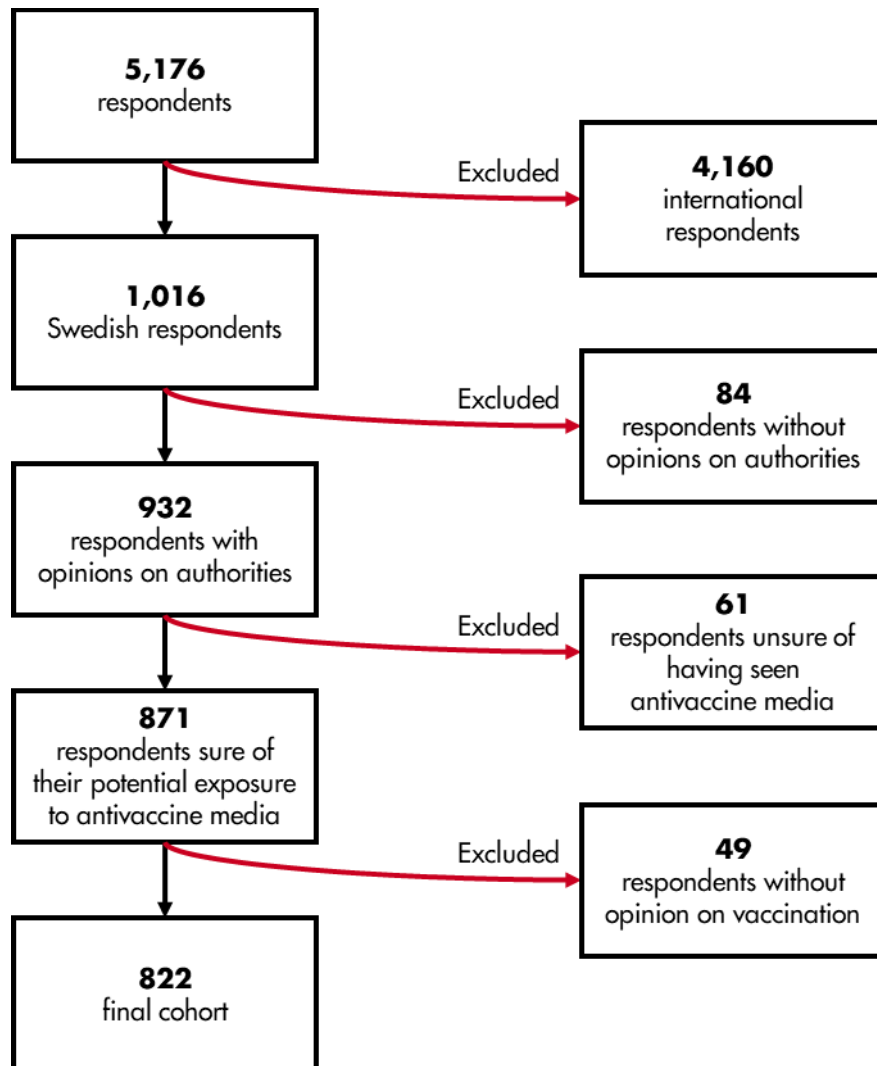


Figure 1: The selection process of the analysed sample

In total, 5,176 responses were collected. Of these, 4,160 respondents were excluded from further analysis, as they were residents of other nations than Sweden and as such outside the scope of this thesis. Of these, 84 had answered that they did not know enough to have an opinion on either the performance of Prime Minister Stefan Löfven, the Swedish Government, the Public Health Agency of Sweden, or mainstream media. An additional 61 people were omitted as they could not answer whether they had seen (or not seen) anti-vaccine content on social media. Lastly, 49 respondents who did not know whether they would have a vaccine against Covid-19 were omitted, resulting in a final sample of 822 respondents for this study.

Table 1: Socio-demographic of the sample

	<i>n</i>	<i>p</i>
Gender		
Male	422	51%
Female	400	49%
Region		
South Sweden	133	16%
North Middle Sweden	63	8%
Småland and the islands	72	9%
West Sweden	162	20%
Middle Norrland	35	4%
Upper Norrland	36	4%
East Middle Sweden	134	16%
Stockholm	187	23%
Employment status		
Full time	322	39%
Part time	100	12%
Unemployed	96	12%
Retired	225	27%
Studying	65	8%
On parental leave	14	2%
Income		
Low	145	18%
Medium	326	40%
High	279	34%
Prefer not to answer	72	9%
Party affiliation		
Don't know	101	12%
Left Party	75	9%
Green Party	39	5%
Social Democrats	184	22%
Centre Party	27	3%
Liberals	19	2%
Moderate Party	132	16%
Christian Democrats	30	4%
Sweden Democrats	188	23%
Other	27	3%
Family		
Has small children	94	11%
Does not have small children	728	89%
Climate change		
Supporters of Net Zero ambition	732	89%
Opponents of Net Zero ambition	90	11%

Distribution of the sample.

3.4. Representativeness

The selected sample largely corresponds with the population of Sweden. According to Statistics Sweden (Statistiska Centralbyrån) (2021) there are slightly more men than women living in Sweden, which is also shown in the sample. How the sample is distributed over statistical regions also correspond well with the distribution of the population over the nation, with no deviations larger than one percentage point. There is an overrepresentation of Sweden Democrats in the sample (23 percent) compared to an opinion poll (19 percent) conducted by Kantar Sifo (2021) during the same period as this survey was made. This is a common phenomenon observed in web panels (Novus, no date).

3.5. Variables

3.5.1. Gender

The reported gender of respondents was treated as a categorical variable.

3.5.2. Age

Respondents were asked to enter their age in the survey. The variable was subsequently treated as a numerical variable.

3.5.3. Region

Respondents were prompted to disclose in which Swedish county they resided. Based on this information, regions were then collapsed according to the NUTS 2 criteria ('Statistical regions in the European Union and partner countries', no date). This makes for eight regions of comparable population size: South Sweden, North Middle Sweden, Småland and the islands, West Sweden, Middle Norrland, Upper Norrland, East Middle Sweden, and Stockholm.

3.5.4. Employment status

Respondents disclosed their employment status. Available categories were full-time employment, part-time employment, unemployed, retired, in full-time education, in part-time education, full-time homemaker, on parental leave, not working for other reasons, and short-time work. Some of the categories were collapsed: 1) In full-time education and part-time education were treated as "studying"; 2) "Full-time homemaker", "not working for other

reasons” and “unemployed” were treated as “Unemployed; and 3) Short-time work and part-time were collapsed into “part-time”.

3.5.5. Income

Respondents were asked to disclose their annual income on a scale between less than SEK 100,000 and more than SEK 1,000,000, with intervals of SEK 100,000. Respondents were also given the option not to disclose their income. Income levels between less than SEK 100,000 and SEK 199,999 were collapsed to become “low income”, income levels between SEK 200,000 and SEK 499,999 “medium income” and SEK 500,000 and above “high income”.

3.5.6. Party affiliation

Respondents were asked which party they would vote for if an election was held today. Alternatives were the parties represented in the Swedish parliament. Respondents were also given the option to tell that they supported another party than those presented, or to not disclose their party affiliation at all. Of the parties in parliament, the Sweden Democrats and the Christian Democrats are commonly referred to as the most social-conservative ones.

3.5.7. Anti-vaccine content exposure

Respondents were asked how strongly they agreed with the statement “I have seen anti-vaccine information on social media in the last few weeks” on a Likert scale with the range “Agree strongly – Agree slightly – Neither agree nor disagree – Disagree slightly – Disagree strongly”. Respondents were also given the option to choose “Do not know”, which led to exclusion from further analysis.

3.5.8. Net Zero

In the survey, respondents were asked about what measures they thought were the least important to reach Net Zero carbon emissions, with an option of “We should not aim for Net Zero carbon emissions”. Based on the respondent’s answer to this question, the variable opinion on climate change was created.

3.5.9. Parents of small children

Respondents were asked if they had children, and if so, how old they were. Parents of children aged 0-4 years were grouped to make one single category, contrasted with the

remaining respondents who were either not parents, or were parents of children older than four years.

3.5.10. Risk denial

On a scale from 1 to 10, respondents were asked how concerned they were with the impact of the coronavirus on their personal health, and the health of people in Sweden in general, respectively. 1 indicated low concern and 10 high concern. The numerical difference between the two answers regarding personal and societal health was calculated to create the ‘risk denial’-score. A respondent who was less concerned with their own health than that of society in general thus received a high ‘risk denial’-score. Consequently, a person who was more concerned with their own health than that of people in general received a negative ‘risk denial’-score.

3.5.11. Globalist Index

On a scale of 1-10, where 1 indicated “come only from my country” and 10 “come from other countries around the world”, respondents were asked about their opinion regarding products, services, and workforce of the following categories: healthcare workers, workers generally, vaccines, medicines generally, personal protective equipment, basic food items, military technology, energy, telecommunications network equipment, and fashion products.

Cronbach’s α for the ten items was 0.91, which is generally considered a strong indication of internal consistency (Taber, 2018), meaning that the ten questions could be interpreted as all relating to the same issue – foreign trade. Therefore, the mean of all categories was calculated together to become a variable called “globalist index” for the remainder of the thesis.

3.5.12. Disapproval Index

Respondents were asked about how they perceived that authorities had performed during the crisis on a scale with the following levels: “Very well – Quite well – Neither well nor badly – Quite badly – Very badly”. The respondents were also given the option to answer that they did not know, resulting in exclusion from further analysis. The respondents’ perceived performance of the 1) government, 2) prime minister Stefan Löfven, 3) the Public Health Agency of Sweden, and 4) newspaper and television media were all investigated. The disapproval rates of the four authorities were found to be highly internally consistent ($\alpha =$

0.82). Therefore, the opinions on the Government, its agencies, and news media were clustered to become a variable labelled as “Disapproval Index”.

3.5.13. Vaccine hesitancy

Respondents were asked about their intention to get a coronavirus vaccine soon after its release. The given options were: “I would definitely do so – Very likely – Quite likely – Quite unlikely – Very unlikely – I would definitely not do so – Don't know – I have already received a coronavirus vaccine”. Those respondents who had already had a vaccine, and those who said that they would definitely have one, were joined to constitute one single category, namely “I would definitely do so”. The “Don’t know”-answers were excluded from further analysis.

For the logistic regression analysis, respondents indicating a positive view of the vaccine were labelled “Positive”, correspondingly those antipathetic towards the vaccine were labelled “Negative”, making the variable dichotomous. This binary variable constitutes the dependent variable of the logistic regression. For the linear regression model, “Vaccine Hesitancy”, as a continuous variable ranging from 1 to 6 constitutes the dependent one.

3.6. Reliability and validity

To assess the trustworthiness of the results, reliability and validity are fundamental concepts (Bryman and Bell, 2015). Reliability addresses the consistency of the measure used. A measure is considered to be reliable if replication of the measurements would lead to consistent results. Validity denotes whether a measure properly measures what is intended to measure.

One measure of reliability is internal consistency. As established, the measures of the two independent variables Globalist Index and Disapproval Index proved to be satisfactorily internally consistent on the multiple-item measures, with Cronbach’s alphas of 0.91 and 0.82 respectively. These are the only multiple-item measures of the analysis.

The test-retest reliability of the measures is the extent to which the measures can be expected to be consistent over time. The survey was conducted during a certain time during the pandemic. In these times, where the situations and conditions are changing rapidly, it is not certain that some of the measures would show the same results in a different time. Gender, age, region, employment status, income and being a parent of a small child would be considered to be comparably stable over time. Due to constraints of the study, it could not

be tested whether measures such as Globalist Index, Disapproval Index, risk denial, party affiliation or views on the Net Zero carbon emissions ambition would show similar results if tested again.

One component of validity is face validity. It is the extent to which a method appears “on its face” to measure the construct of interest. The questions in the survey and the responses are aligned with what is intended to measure, with one possible exception. The measure of having been exposed to antivaccine content in social media is based on a self-reported Likert-scale item, where respondents were asked to the extent of which they agreed with having seen such content. It is possible that respondents are not capable of distinguishing anti-vaccine content from other content. Nevertheless, this measure was included, but with the authors knowledge of the measure’s possible limitations. Also, the dependent variable of whether a respondent saw it likely that they would have the vaccine against Covid-19 is not certain to correspond with actual vaccination – a person may very well in a survey say that they are likely to have a vaccine, but in the end refrain from having it. This could be due to laziness, time constraints, or other factors. Thus, this study cannot make any claims about actual vaccine uptake, but rather people’s self-reported willingness to have the vaccine in relation to the independent variables.

3.7. Limitations

This study is conducted amid the Covid-19 pandemic. During any crisis, situations are volatile, and this crisis is no exception. Therefore, the results of this study are not certainly replicable, as the specific situation perceived by respondents may be hard to recreate.

The scope of this study is Sweden, considering its unique position in terms of societal trust (Ortiz-Ospina and Roser, 2016) and the nation’s experience of vaccine side-effects (Wijnans *et al.*, 2013). Results from this study are therefore not certain to be applicable to other nations but can be well suited for comparison.

As with any study, there are certain limitations to the data. There exists critique against the practice of weighted sampling, where scholars argue that a truly random sample is more representative of the population and less susceptible to bias (Bryman and Bell, 2015). Nevertheless, this method is popular within research and advocated for its efficiency and comparative cost-effectiveness. From the assessment done in this chapter, the sample seems to be highly representative of the population.

In the selection of the final cohort of respondents studied, decisions to exclude potentially relevant data were made. For instance, this study cannot claim to make any inferences about people who have no opinion on how the authorities have performed in the face of the pandemic, neither can it explain levels of hesitancy among people who do not know whether they should have a vaccine against Covid-19 or not. These decisions can be defended by the aim of the thesis, to determine which socio-demographic factors and opinions there are that can affect vaccine hesitancy. It does not lie within the aim of the study to research non-opinions.

METHODOLOGY

In this chapter, the study's methodology is described. The scientific approach and the research strategy that stems from it are explained. The statistical tests conducted in this thesis are explained if deemed likely to be unfamiliar to the reader.

4.1. Scientific approach

To recapitulate, this study sets out to answer the research question: *Which are the socio-demographic and attitudinal determinants of Covid-19 vaccination intentions in Sweden?*

The aim of exploring the “what” rather than the “why” of this issue makes a deductive approach applicable (Bryman and Bell, 2015). Considering both the maturity of the research on vaccine hesitancy, what is known today about the phenomenon, and the novelty of the Covid-19 pandemic, there is good cause to explore whether existing theories about vaccine hesitancy, relating to other vaccines, hold true also for vaccination against Covid-19. In addition, it is relevant to test these hypotheses in a Swedish context. A similar approach to studies previously conducted allows for comparison, and the possibility of highlighting any potential differences or similarities.

Given the ambition to test these theories in this new context, a quantitative approach has been selected (Edmondson and McManus, 2007). This epistemologically positivist approach is shared with many of the researchers concerned with issues relating to vaccine hesitancy. Thus, the results found in this study can be compared with findings from related studies.

4.2. Research strategy and design

Based on the position in the positivist paradigm established above, a quantitative research strategy has been employed for this thesis. Several tests have been conducted to test how the dependent variable – vaccine hesitancy – relates to the independent variables chosen based on the literary review. In this section, the tests conducted in this study that can be considered to be less familiar to the reader are explained.

4.2.1. Welch's *t*-test

Equation 1: how the test statistic t is calculated with the sample mean \bar{X}_i and the standard error $\sqrt{\frac{S_i^2}{n_i}}$, where i is a given sample.

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}}}$$

Equation 2: Under the null hypothesis, t is approximately distributed as the t -distribution with ν degrees of freedom.

$$\nu = \left(\frac{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}}{\left(\frac{S_1^4}{n_1^2(n_1 - 1)} + \frac{S_2^4}{n_2^2(n_2 - 1)} \right)} \right)$$

Throughout the thesis, Welch's t -test is used. This is a measure taken for robustness. Whereas the more commonly used Student's t -test assumes equal variances, Welch's does not. Recent findings suggest that Welch's t -test should be used per default, as it performs better when the assumption for Student's t -test of equal variances does not hold, and on equal terms when it does (Delacre, Lakens and Leys, 2017). The t -statistic is calculated as shown in Equation 1 and compared with the t -value received by plugging in the ν degrees of freedom into the t -distribution.

Any time Welch's t -test is conducted, a Wilcoxon rank-sum test is conducted alongside it, for added robustness.

4.2.2. Welch's one-way test

ANOVA assumes that 1) observations are independent, 2) that distribution of the dependent variable is normal and 3) that variances are homoscedastic, i.e., equal. Where the assumption of equal variances does not hold, Welch's one-way test is used instead.

Where significant differences between groups are found, Games-Howell tests are conducted post-hoc for Welch's one-way test. With this test, similar to how Tukey's post-hoc test is conducted after a one-way ANOVA, it is possible to define between which groups there are significant differences. Specifically, the test identifies any difference between two means that is greater than the expected standard error.

4.2.3. Fisher's exact test

Fisher's exact test is used in the analysis of contingency tables, similar to a χ^2 test. It is commonly used when cell counts predicted on the null hypothesis, i.e., the expected values, are small. In these situations, a χ^2 test can lead to wrong conclusions concerning the hypothesis. In the analysis of this study, Fisher's exact test is used to test if the distribution of hesitant and non-hesitant respondents significantly deviates from what could be expected. For a 2×2 contingency table, the calculation of the p -value of seeing this particular distribution can be described as follows:

Equation 3: Fisher's exact test. In this test, a , b , c , and d are observed values in the contingency table and n the total number of observations. The probability of this distribution is denoted by p .

$$p = \frac{(a + b)! (c + d)! (a + c)! (b + d)!}{a! b! c! d! n!}$$

4.2.4. Ordinary Least Squares (OLS) regression

After testing the independent variables for any significant relationship with the dependent, variables of interest are selected to examine how the variables interrelate. The regression model function is:

$$y_i = \alpha + \beta x_i + \varepsilon_i$$

In this function, y_i is the dependent variable, α the intercept, β the parameter estimate of the independent variable x_i and ε_i the error term. By manipulating the values of α and β , the goal is a model that would provide the best fit for the actual data points. Minimising the sum of the squares of the differences between the observed value of the dependent value gives the sum of least squares.

For robustness, the regression model is controlled for heteroscedasticity. If considered to be heteroscedastic, the coefficients will be presented with robust standard errors. To assess the degree of multicollinearity, the Variation Inflation Factor (VIF) is calculated and presented if a VIF factor above 10 is found, as it is a commonly accepted threshold of problematic values (Vittinghoff, 2012).

4.2.5. Binary logistic regression

Using a logistic regression warrants an explanation. It is commonly used within the medical and social sciences to model the probability of an outcome (Hosmer and Lemeshow, 2000; Pohlman and Leitner, 2003).

The logistic regression assumes that the dependent variable is binary, which is why the seven levels of the scale used to measure hesitancy (“I would definitely do so – Very likely – Quite likely – Quite unlikely – Very unlikely – I would definitely not do so – Don't know – I have already received a coronavirus vaccine”) have been collapsed into two categories: hesitant and non-hesitant. As the dependent variable is binomial, the model does not assume any normal distribution. For this thesis, non-hesitant respondents are labelled “0” and hesitant “1”.

The results of the logistic regression are interpreted differently from the usual OLS regression. In logistic regressions, instead of a regular β , a parameter estimate called the logit coefficient is obtained. Logit is the natural logarithm of the odds of an event happening. In mathematical terms, this gives:

$$l = \ln \frac{p}{1-p} = \beta_0 + \beta_i x_i$$

In this equation, l is the logit, $\frac{p}{1-p}$ the odds, and β_i the parameter, or the logit coefficient, of the model. Through this equation, one can obtain the probability of an event happening, $P(Y = 1)$ by first exponentiating the logit to receive the odds:

$$\frac{p}{1-p} = e^l$$

Having the odds, algebraic manipulation gives p , the predicted probability of an event occurring.

$$\frac{e^l}{1 + e^l} = p$$

A positive logit means a greater probability of an event occurring whereas a negative logit means a lesser probability of the same.

After conducting the binary logistic regression, several tests will be carried out to assess the model's goodness-of-fit and other measures. First, McFadden's pseudo R^2 is calculated. This can be interpreted as the model's capacity of explaining variation – much like the R^2 of OLS. McFadden's R^2 compares how the maximum likelihood of the fitted model compares to the likelihood of a null model without any covariates and only an intercept.

For a measure of the goodness-of-fit, a Hosmer-Lemeshow test is conducted. Using an approach based on Pearson's χ^2 -test, it is used to calculate whether the observed proportions of events are similar to predicted subgroups of the data. The null hypothesis holds that the model fits the data.

To assess how well the model performs in classifying hesitant and non-hesitant respondents, the receiver operating characteristic curve, or the ROC, will be plotted, and the area under this curve, AUC, calculated. The AUC ranges between 1 and 0. A model whose predictions are entirely correct has an area of 100 percent; one that is entirely wrong correspondingly has an area of 0 percent.

Except for evaluating the performance in classification, the ROC helps in determining where the threshold between classifications should be, i.e. which value of p , between 1 and 0, above which a respondent will be predicted as hesitant. The AUC measure is in itself invariant to the classification threshold but allows for an interpretation of which threshold is optimal when paired with the Youden's J statistic, a measure to find the point of the ROC where sensitivity and specificity (to be detailed in the end of this section). Youden's J statistic is calculated as follows:

$$J = \text{sensitivity} + \text{specificity} - 1$$

While the default threshold is 0.5, this can be adjusted depending on how one weighs the risk of conducting a type I error (not predicting hesitancy in a hesitant respondent) and a type II error (predicting a respondent to be hesitant that in reality is non-hesitant). A lower threshold will lead to a lower risk of type I errors, at the cost of a greater risk of type II errors. In the case of this thesis, a lower threshold leads to the model being more capable of accurately predicting hesitant respondents; at the same time, it will mislabel respondents as hesitant when they in fact are not.

After deciding the most adequate threshold, a confusion matrix is developed based on the selected threshold. This is a visualisation of how the model performs in terms of sensitivity,

specificity, and precision. For all these measures, an optimal number would be 1, the worst 0.

First, sensitivity is calculated; in this case as the number of correct predictions of hesitant respondents divided by the total number of respondents who are hesitant towards having a vaccine against Covid-19. It measures the degree of type II errors caused by the model.

$$\text{Sensitivity} = \frac{\text{Respondents correctly identified as hesitant}}{\text{All hesitant respondents}}$$

Second, specificity is conversely calculated as the number of correct predictions of non-hesitant respondents divided by the total number of respondents who are likely to have the vaccine. It measures the degree of type I errors caused by the model.

$$\text{Specificity} = \frac{\text{Respondents correctly identified as non – hesitant}}{\text{All non – hesitant respondents}}$$

Third, precision is a measure to compare the correct predictions of hesitant respondents with incorrect predictions. In other terms, precision expresses the proportion of the respondents whom the model predicts are relevant that actually are relevant.

$$\text{Precision} = \frac{\text{Respondents correctly identified as hesitant}}{\text{All respondents identified as hesitant}}$$

As stated above, these metrics determine how well the model classifies respondents as hesitant and non-hesitant.

RESULTS

In this chapter, statistical tests of the data are presented, detailed, and explained, with the purpose of testing the previously generated hypothesis. The chapter begins with descriptive statistics of the sample. Thereafter, statistical tests of significance, as well as regressions, OLS and binary, follow to determine how well vaccine hesitancy can be predicted using models based on the presented survey data. Lastly, an overview of null hypothesis will be presented and subsequently rejected, or not, based on the statistical analysis.

5.1. Descriptive statistics

As the relevance of the Swedish focus stems from Sweden's unique approach to handling the Covid-19 pandemic, the authors deemed it relevant to control the sample data for trends in political stances: along party lines against whether they 1) approve of the government's strategy and 2) whether they are more globalist or nationalist, i.e. GAL or TAN.

It can be expected that a person's party affiliation is reflected in how well they perceive that authorities have performed during the pandemic. People supporting the parties in Government would then be more likely to approve of authorities than people who support parties in opposition.

Table 2: Disapproval rates of authorities over party affiliations

<i>Party affiliation</i>	<i>n</i>	<i>p</i>	<i>M</i>	<i>SD</i>
Do not know	101	12%	3.27	0.95
Left Party ^a	75	9%	2.72	0.98
Green Party ^b	39	5%	2.52	0.71
Social Democrats ^b	184	22%	2.33	0.80
Centre Party ^c	27	3%	2.58	0.83
Liberals ^c	19	2%	3.09	1.05
Moderates ^a	132	16%	3.23	0.84
Christian Democrats ^a	30	4%	3.50	0.95
Sweden Democrats ^a	188	23%	4.00	0.89
Other	27	3%	3.5	0.81

^a Parties in opposition to the Government

^b Parties in Government

^c Confidence-and-supply of the Government

The table shows disapproval rates of authorities (the Government, the Prime Minister, the Public Health Agency of Sweden, and mainstream media) on derived from mean scores of 5-point Likert scale items.

Overall, disapproval rates in the sample are lower among people who support parties in the Government than those who do not.

It can be expected that supporters of parties regularly positioned in the TAN end of the political landscape are more sceptical towards international trade than supporters of parties in the GAL end. To determine how well the opinion towards imports of goods and services performs as a measure of position on GAL-TAN, the scores of the globalist index were compared between party sympathies.

Table 3: Globalist index scores over party affiliations

<i>Party affiliation</i>	<i>n</i>	<i>p</i>	<i>M</i>	<i>SD</i>
Do not know	101	12%	4.71	1.77
Left Party ^a	75	9%	5.05	1.94
Green Party ^b	39	5%	5.44	2.03
Social Democrats ^b	184	22%	5.38	1.89
Centre Party ^c	27	3%	5.03	1.95
Liberals ^c	19	2%	5.82	1.21
Moderates ^a	132	16%	5.26	1.68
Christian Democrats ^a	30	4%	5.56	2.14
Sweden Democrats ^a	188	23%	4.74	1.98
Other	27	3%	4.69	2.09

^a Parties in opposition to the Government

^b Parties in Government

^c Confidence-and-supply of the Government

The table shows opinions on global trade derived from means of ten different products and services.

In the sample, Sweden Democrats were those who held the least favourable views on imported goods, and Liberals those who held the most favourable views. Surprisingly, the Christian Democrats of the sample had among the highest mean scores of positive opinions on international trade.

For an overview of the distribution of the data, the central tendency of the numeric variables was studied.

Table 4: Descriptive statistics of numeric variables

<i>Statistic</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>25th percentile</i>	<i>Median</i>	<i>75th percentile</i>	<i>Max</i>
Vaccine hesitancy ^a	822	2.17	1.60	1	1	1	3	6
Age	822	48.60	17.60	18	33	49	64.8	89
Exposure to anti-vaccine ^b	822	2.71	1.41	1	2	2	4	5
Risk denial ^c	822	0.92	2.17	-6	0	0	2	9
Globalist index ^d	822	5.08	1.90	0	4	5	6.1	10
Disapproval index ^b	822	3.09	1.03	1	2.2	3	4	5

^a 6-point Likert scale

^b 5-point Likert scale

^c Interval between -10 and 10

^d Interval between 0 and 10

The table shows measures of the central tendency in the numeric variables.

5.2. Numeric variables

Having established an understanding of the results from a perspective of descriptive statistics, the proceeding statistical analysis will serve as grounds for the testing the previously generated hypothesis. The numeric variables age, exposure to anti-vaccine content on social media, risk denial, and disapproval of authorities were tested against vaccine hesitancy for any significant correlations.

Table 5: Sample correlation table showing Pearson's *r*

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6
1. Vaccine hesitancy ^a	2.17	1.60	-					
2. Age	48.60	17.60	-.19***	-				
3. Exposure to anti-vaccine ^b	2.71	1.41	-.04	.19***	-			
4. Risk denial ^c	0.92	2.17	.04	-.07*	-.02	-		
5. Globalist index ^d	5.08	1.90	-.06	-.08*	-.08*	-.04	-	
6. Disapproval ^b	3.09	1.03	.19***	.03	.04	.07*	-.16***	-

^a 6-point Likert scale

^b 5-point Likert scale

^c Interval between -10 and 10

^d Interval between 0 and 10

p* < .05. *p* < .01 ****p* < .001.

First, the correlations between the independent variables were examined. Moderate correlations were found between the dependent variable, vaccine hesitancy, and the two independent variables age and disapproval. Disapproval had a moderately positive correlation with vaccine hesitancy while age had a negative correlation. Between the independent variables, a noteworthy moderate correlation was found between exposure to anti-vaccine content in social media and age. Older respondents disagreed with the notion of having seen anti-vaccine content in social media more than younger respondents did. Age was also, to a lesser, yet significant degree, negatively correlated with risk denial and globalism, indicating that younger respondents were more prone to risk denial than older respondents, and held less positive sentiment towards foreign trade. A negative view towards foreign trade was also moderately correlated with disapproval of the performance of authorities during the pandemic.

Table 6: Results of t-tests of differences in mean scores between hesitant and non-hesitant

Variable	Hesitant (n = 155)		Non-hesitant (n = 667)		t	df	95% CI		p
	M	SD	M	SD			LL	UL	
Age ^{a d}	43.52	16.48	49.72	17.70	4.17	243.58	3.27	9.14	<.001***
Seen anti-vaccine ^{a e}	2.61	1.36	2.73	1.42	0.95	238.46	-0.09	∞	0.17
Risk denial ^{b e}	1.11	2.27	0.88	2.14	-1.17	222.10	-∞	0.10	0.12
Globalist index ^{c e}	4.81	2.03	5.15	1.86	1.91	218.69	0.05	∞	.03*
Disapproval ^{a e}	3.47	1.10	3.00	0.99	-4.89	215.77	-∞	-0.31	<.001***

^a 5-point Likert scale

^b Interval between -10 and 10

^c Interval between 0 and 10

^d Two-sided t-test.

^e One-sided t-test.

There were significant differences in the means of age and disapproval of authorities between respondents hesitant and non-hesitant towards the Covid-19 vaccine.

*p < .05. **p < .01 ***p < .001.

For an added measure of robustness, the continuous variables were tested against vaccine hesitancy as a dichotomised variable. Also in this test, age and disapproval of authorities were shown to be correlated with vaccine hesitancy.

5.3. Categorical variables

For all categorical variables, tests were conducted to explore possible differences between groups in their opinion on vaccination.

5.3.1. Gender

To test if any gender is more hesitant than the other towards vaccination against Covid-19, a two-tailed Welch's two sample t-test was performed. There was no significant difference between men (M = 2.11, SD = 1.55) and women (M = 2.23, SD = 1.63); $t(810.76) = -1.13$, $p = .259$. These results suggest that men and women have similar propensities to take the vaccine against Covid-19.

For added robustness, non-parametric tests were conducted as well. Nevertheless, a one-sided Wilcoxon rank sum test did not yield any different results ($W = 80910$; $p = .263$), nor did Fisher's exact test ($p = .182$) when comparing frequencies in the binary division into hesitant and non-hesitant respondents.

5.3.2. Region

To examine any differences between residents of different regions, an approach using ANOVA was used. Before this test, a Bartlett test on the variable was conducted to test the assumption of equal variances between categories, determining whether the variable should be tested with ANOVA or Welch's one-way test. The conclusion of the Bartlett test was that the assumption of equal variance held true ($K^2 = 5.05$, $df = 7$, $p = .654$), and subsequently a one-way ANOVA test was conducted to compare the effect of place of residence on vaccine hesitancy. This analysis showed no significant difference in the means people of different regions at the $p < .05$ level for the eight regions [$F(7, 814) = 0.49$, $p = .846$].

The test was complemented with the non-parametric Kruskal-Wallis test ($\chi^2 = 2.60$, $df = 7$, $p = .919$); it returned no other conclusion than did the ANOVA test, nor did Fisher's exact test ($p = .803$).

5.3.3. Employment status

A Bartlett test ($K^2 = 8.90$, $df = 5$, $p = .113$) allowed for the assumption of equal variances between the six groups, permitting a one-way ANOVA test. This revealed a significant effect of employment status on vaccine hesitancy at the $p < .05$ level [$F(5, 816) = 5.66$, $p < 0.001$].

Post-hoc comparisons using Tukey's range test indicated that the mean score for retirees ($M = 1.79$, $SD = 1.39$) was significantly different from full-time workers ($M = 2.19$, $SD = 1.63$), students ($M = 2.58$, $SD = 1.65$) and the unemployed ($M = 2.68$, $SD = 1.71$). There were no significant differences in vaccine hesitancy between the unemployed and full-time workers. Part-time workers ($M = 2.15$, $SD = 1.60$) and parents on parental leave ($M = 2.43$, $SD = 1.55$) did not differ significantly from the others, respectively. Taken together, these results suggest that retirees are the most likely to vaccinate against Covid-19, and that students and the unemployed are least likely to have it.

For added robustness, a Kruskal-Wallis test ($\chi^2 = 34.17$, $df = 5$, $p < 0.001$) was conducted together with a Fisher exact test ($p < .001$), both confirming that employment status indeed has a significant effect on vaccine hesitancy.

5.3.4. Income

The results of the Bartlett test ($K^2 = 2.81$, $df = 3$, $p = 0.422$) gave that equal variances between the four income groups could be assumed. Thus, an ANOVA test was conducted, which

revealed a significant effect of income on vaccine hesitancy at the $p = .05$ level [$F(3, 818) = 4.02, p = .007$].

Post-hoc comparisons employing Tukey's range test suggested that the mean score of high earners ($M = 2, SD = 1.50$) was significantly different from that of low earners ($M = 2.55, SD = 1.67$). Those who chose not to disclose their income ($M = 2.04, SD = 1.60$) and middle range earners ($M = 2.17, SD = 1.62$) did not show any significantly different levels of hesitancy. These findings indicate that a person's level of income holds explanatory power over their intention to have a vaccine against Covid-19, when comparing between those who earn the most and those who earn the least.

The added robustness measures of a Kruskal-Wallis test ($\chi^2 = 14.76, df = 3, p = .002$) and Fisher's exact test ($p = .350$) both supported this claim.

5.3.5. Party affiliation

Following a Bartlett test ($K^2 = 44.07, df = 9, p < .001$) the assumption of equal variances was rejected. Thus, a Welch's one-way test was conducted. This revealed that there were significant differences in vaccine hesitancy between people of different party sympathies at the $p < .05$ level [$F(9.00, 156.79) = 6.52, p < .001$].

A Games-Howell test revealed that there were significant differences in mean scores between the sympathisers of the Sweden Democrats ($M = 2.65, SD = 1.83$) and those of the Left Party ($M = 1.8, SD = 1.30$), the Social Democrats ($M = 1.81, SD = 1.29$) and the Moderate Party ($M = 1.82, SD = 1.37$). The means of vaccine hesitancy between respondents supporting the Centre Party ($M = 1.63, SD = 1.11$), the Liberals ($M = 1.84, SD = 1.26$), the Green Party ($M = 1.82, SD = 1.39$) or the Christian Democrats ($M = 2.73, SD = 1.68$) did not differ significantly from each other or any other parties. The mean scores of people supporting other parties ($M = 3.19, SD = 1.96$) and those who opted to not disclose their party affiliation ($M = 2.55, SD = 1.76$) did not differ significantly from each other, but both were significantly higher than the means of Lefts, Greens, Social Democrats, and Centrists. These results suggest that a person's political views affect their hesitancy towards vaccination against Covid-19, with Sweden Democrats being significantly more hesitant than several other parties.

A Kruskal-Wallis test ($\chi^2 = 55.68, df = 9, p < .001$) and Fisher's exact test ($p < .001$) both gave the same indication.

5.3.6. Net Zero

To test if opponents of the idea of society aiming for Net Zero carbon emissions were more hesitant towards vaccination against Covid-19, a one-tailed Welch's two-sample t-test was conducted. There was a significant difference between opponents ($M = 2.54$, $SD = 1.80$) and supporters ($M = 2.12$, $SD = 1.56$) of Net Zero emissions; $t(106.18) = -2.13$, $p = .035$. This result confirms that opponents of societal action to combat climate change are more hesitant towards vaccinating against Covid-19.

A one-sided Wilcoxon rank sum test ($W = 28797$, $p = .017$) affirmed this result. Yet, Fisher's exact test ($p = .088$) did not.

5.3.7. Parent of small children

To test whether parents of small children (from infants to four-year-olds) were more hesitant towards having a vaccine against Covid-19 than others, a one-tailed Welch's two-sample t-test was conducted. There was no significant difference between parents of small children ($M = 2.17$, $SD = 1.49$), and other respondents ($M = 2.17$, $SD = 1.61$); $t(122.66) = -.02$, $p = .494$. This indicates that having small children does not affect a person's willingness to vaccinate against Covid-19.

A one-sided Wilcoxon rank sum test ($W = 32998$, $p = .270$) and Fisher's exact test ($p = .487$) supported this conclusion.

Table 7: Overview of respondents dichotomised into hesitant and non-hesitant

		Hesitant (n = 155)		Non-hesitant (n = 667)	
		<i>n</i>	<i>p</i>	<i>n</i>	<i>p</i>
Gender					
	Male	72	46%	350	52%
	Female	83	54%	317	48%
Region					
	South Sweden	29	19%	104	16%
	North Middle Sweden	16	10%	47	7%
	Småland and the islands	13	8%	59	9%
	West Sweden	28	18%	134	20%
	Middle Norrland	5	3%	30	4%
	Upper Norrland	5	3%	31	5%
	East Middle Sweden	23	15%	111	17%
	Stockholm	36	23%	151	23%
Employment status**					
	Full time	57	37%	265	40%
	Part time	23	15%	77	12%
	Unemployed	27	17%	69	10%
	Retired	27	17%	198	30%
	In education	19	12%	46	7%
	On parental leave	2	1%	12	2%
Income*					
	Low	39	25%	106	16%
	Medium	62	40%	264	40%
	High	42	27%	237	36%
	Prefer not to answer	12	8%	60	9%
Party affiliation***					
	Don't know	32	21%	69	10%
	Left Party	8	5%	67	10%
	Green Party	4	3%	35	5%
	Social Democrats	20	13%	164	25%
	Centre Party	1	1%	26	4%
	Liberals	2	1%	17	3%
	Moderate Party	15	10%	117	18%
	Christian Democrats	8	5%	22	3%
	Sweden Democrats	55	35%	133	20%
	Other	10	6%	17	3%
Family					
	Has small children	15	10%	79	12%
	Does not have small children	140	90%	588	88%
Climate change					
	Supporters of Net Zero ambition	132	85%	600	90%
	Opponents of Net Zero ambition	23	15%	67	10%

Significance derived from Fisher's exact test. Percentages are to be read for each column and category separately.

*p < .05. **p < .01 ***p < .001.

5.4. Regression Analysis

For the analysis of the data, both an Ordinary Least Squares (OLS) and a logit model were evaluated, with vaccine hesitancy as the dependent variable. For the linear regression, vaccine hesitancy is a six-degree scale. For the binary logistic, the dichotomised variable of vaccine hesitancy is employed. The selection of variables is based on the initial tests conducted previously in the study. Among the candidate variables, *age*, *employment*, *income*, *party affiliation*, *exposure to anti-vaccine content*, *opinion on Net Zero ambition*, *risk denial*, *globalist index* and *disapproval index* were included. In addition, a possible interaction effect was explored between *risk denial* and *age*.

5.4.1. Linear Regression

An exploratory first regression was carried out, and subsequently tested for heteroscedasticity with a Breusch-Pagan test (BP = 69.595, df = 24, $p < .001$), showing that the data indeed were heteroscedastic. For a more robust interpretation of the data, White standard errors were applied to the regression.

The formula for the linear regression is as follows:

Vaccine hesitancy

$$\begin{aligned} = & \alpha_i + \beta_1 Age_i + \beta_2 Employment\ status_i + \beta_3 Income_i + \beta_4 Income_i \\ & + \beta_5 Party\ affiliation_i + \beta_6 Seen\ anti - vaccine\ content_i \\ & + \beta_7 Climate\ change_i + \beta_8 Risk\ denial_i + \beta_9 Globalist\ index_i \\ & + \beta_{10} Globalist\ index_i + \beta_{11} Disapproval\ index_i + \beta_{12} (Age_i \\ & * Risk\ denial_i) \end{aligned}$$

Table 8: OLS regression with robust standard errors

	<i>Estimates</i>	<i>SE</i>	<i>95% CI</i>		<i>p</i>
			<i>LL</i>	<i>UL</i>	
Intercept	3.02***	0.46	2.12	3.90	<.001
Age	-0.02***	0	-0.03	-0.01	<.001
Employment status					
Part time	-0.08	0.19	-0.46	0.29	.665
Unemployed	0.27	0.20	-0.12	0.67	.177
Retired	-0.06	0.17	-0.41	0.28	.713
In education	0.20	0.23	-0.26	0.66	.395
On parental leave	0.31	0.43	-0.54	1.16	.480
Income					
Low	0.46	0.23	-0.01	0.88	.055
Medium	0.24	0.20	-0.15	0.64	.223
High	0.11	0.20	-0.29	0.51	.603
Party affiliation					
Left Party	-0.70**	0.24	-1.18	-0.22	<.004
Green Party	-0.69*	0.31	-1.29	-0.09	.025
Social Democrats	-0.52*	0.21	-0.94	-0.10	.015
Centre Party	-0.66*	0.29	-1.24	-0.09	.023
Liberals	-0.68*	0.30	-1.27	-0.10	.022
Moderate Party	-0.52*	0.22	-0.94	-0.09	.017
Christian Democrats	0.24	0.35	-0.44	0.92	.489
Sweden Democrats	0.12	0.23	-0.33	0.57	.597
Other	0.41	0.41	-0.39	1.21	.314
Seen anti-vaccine content	-0.03	0.04	-0.11	0.04	.386
Climate change					
Opponent of Net Zero ambition	0.45*	0.18	0.11	0.80	.010
Risk denial	-0.23***	0.07	-0.35	-0.10	<.001
Globalist index	-0.04	0.03	-0.11	0.02	.193
Disapproval index	0.14*	0.07	0.00	0.28	.049
Age x risk denial	0.01***	0	0.00	0.01	<.001
Observations					822
R ² / R ² adjusted					0.16 / 0.13

Baseline categories: full time worker, undecided voter, undisclosed income and supporter of the Net Zero ambition.

*p < .05. **p < .01 ***p < .001.

5.4.2. Binary logistic regression

As one of the objectives of the thesis was to examine how socio-demographic factors and opinions can help predict degree of vaccine hesitancy, a binary logistic regression was performed on the same independent variables tested in the OLS regression, with the dependent variable vaccine hesitancy replaced from a scale-item to a binary item. The formula for the binary logistic is the following, where *Vaccine hesitancy* is a logit item:

Vaccine hesitancy

$$\begin{aligned} &= \alpha_i + \beta_1 Age_i + \beta_2 Employment\ status_i + \beta_3 Income_i + \beta_4 Income_i \\ &+ \beta_5 Party\ affiliation_i + \beta_6 Seen\ anti - vaccine\ content_i \\ &+ \beta_7 Climate\ change_i + \beta_8 Risk\ denial_i + \beta_9 Globalist\ index_i \\ &+ \beta_{10} Globalist\ index_i + \beta_{11} Disapproval\ index_i + \beta_{12} (Age_i \\ &* Risk\ denial_i) \end{aligned}$$

Table 9: Binary Logistic Regression

		<i>Estimates</i>	<i>SE</i>	<i>95% CI</i>		<i>p</i>
				<i>LL</i>	<i>UL</i>	
Intercept		-0.42	0.72	-1.85	0.98	.559
Age		-0.03***	0.01	-0.05	-0.01	<.001
Employment status						
	Part time	0.32	0.31	-0.31	0.93	.304
	Unemployed	0.39	0.31	-0.23	1.00	.214
	Retired	-0.03	0.35	-0.72	0.64	.923
	In education	0.54	0.37	-0.21	1.26	.153
	On parental leave	-0.08	0.83	-2.04	1.39	.920
Income						
	Low	0.72	0.42	-0.07	1.57	.081
	Medium	0.55	0.39	-0.19	1.35	.163
	High	0.32	0.41	-0.46	1.16	.433
Party affiliation						
	Left Party	-1.38**	0.45	-2.32	-0.53	.002
	Green Party	-1.38*	0.60	-2.69	-0.30	.020
	Social Democrats	-1.10**	0.35	-1.80	-0.43	.002
	Centre Party	-2.24*	1.06	-5.16	-0.58	.034
	Liberals	-1.59	0.82	-3.53	-0.15	.054
	Moderate Party	-1.08**	0.37	-1.82	-0.37	.003
	Christian Democrats	-0.19	0.50	-1.21	0.76	.707
	Sweden Democrats	-0.13	0.29	-0.71	0.45	.648
	Other	-0.10	0.49	-1.09	0.84	.832
Seen anti-vaccine content		-0.06	0.07	-0.20	0.08	.440
Climate change						
	Opponent of Net Zero ambition	0.45	0.30	-0.15	1.02	.130
Risk denial		-0.41**	0.13	-0.66	-0.17	.001
Globalist index		-0.07	0.05	-0.17	-0.04	.201
Disapproval index		0.24*	0.11	0.02	0.46	.0032
Age x risk denial		0.01***	0.00	0.00	0.02	<0.001
Observations						822
Akaike Information Criterion (AIC)						739.67

Baseline categories: full time worker, undecided voter, undisclosed income and supporter of the Net Zero ambition.

*p < .05. **p < .01 ***p < .001.

McFadden's pseudo R^2 was calculated to .13.

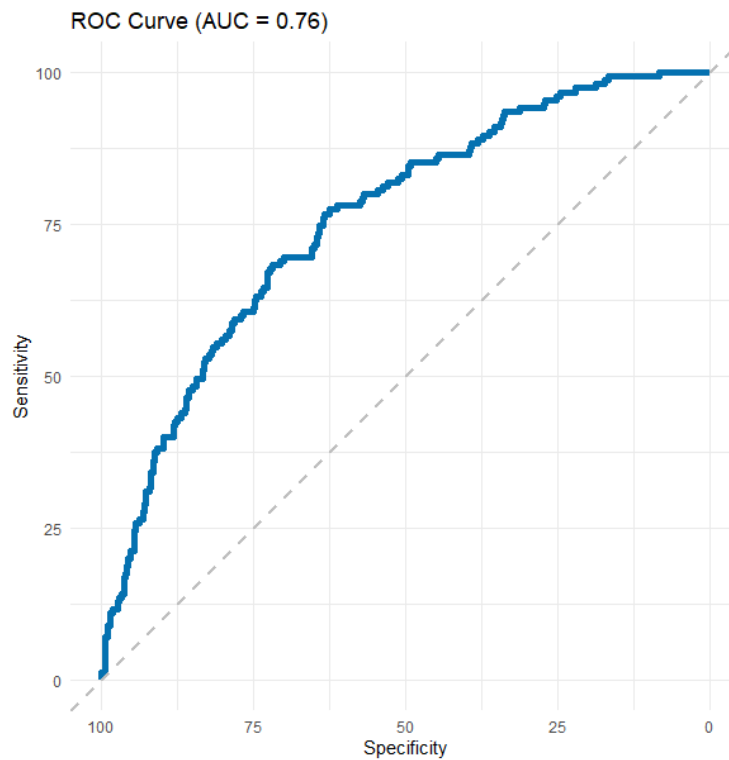


Figure 2: ROC curve

The ROC shows how different values of the threshold affect the two measures' sensitivity and precision. The AUC is .76, indicating that the model is within the acceptable range of .70-.80 (Hosmer and Lemeshow, 2000). The J -statistic to this curve shows that the optimal threshold in terms of specificity and sensitivity is at .21. At this point, the model's specificity is .72 and sensitivity .68, giving a J -statistic of .40. Rounding the threshold to .20 and inserting it into the confusion matrix gives:

Table 10: Confusion matrix

		Observed		Total
		Non-hesitant	Hesitant	
Predicted	Non-hesitant	471	49	520
	Hesitant	196	106	302
	Total	667	155	822

With a threshold at .20, the model has an error rate of 31 percent.

It is worth noting that in terms of precision, the model performs worse using this threshold than it does with the default .5; .35 in precision for the lower threshold and .58 for the higher threshold. This means that by using the lower threshold, more respondents who are likely to

get a vaccine against Covid-19 are being mislabelled as hesitant. In fact, about two thirds of those the model predicts to be hesitant are not. In short, the lower threshold gives a lesser rate of type I errors while rate the type II errors have increased.

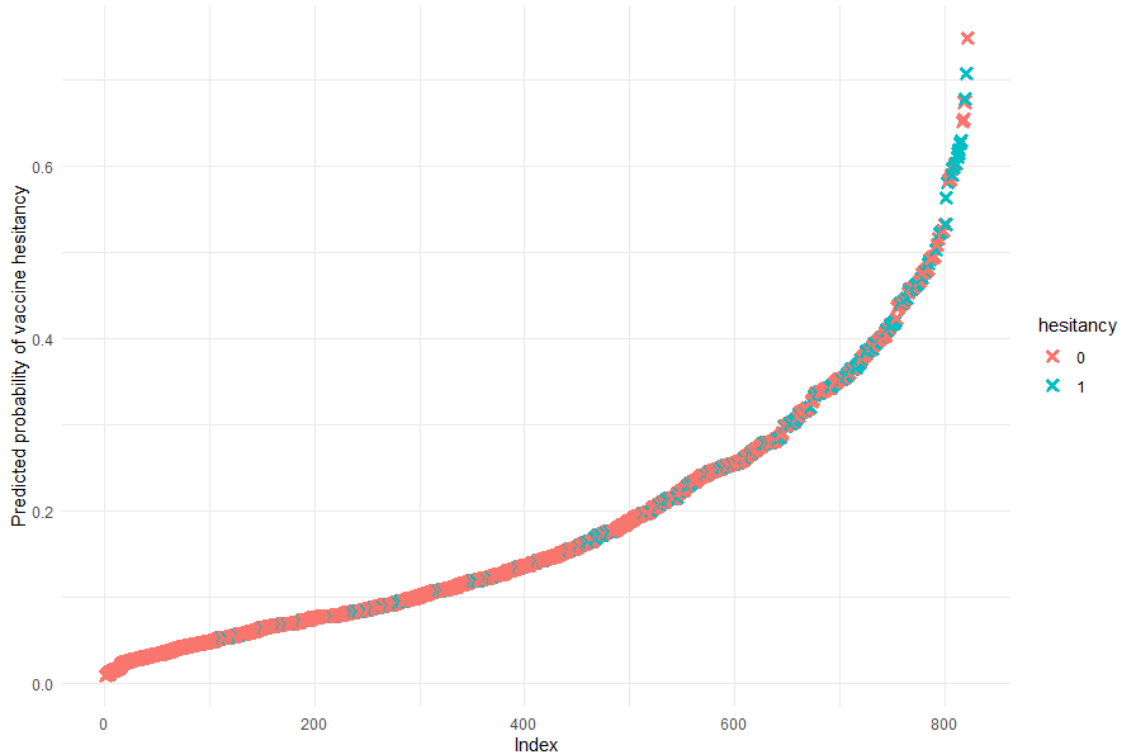


Figure 3: Performance of the model

The graph plots all respondents on a scale of increased predicted probability of vaccine hesitancy from left to right on the x-axis. A respondent on the bottom left end of the curve is thus highly unlikely to be hesitant, whereas a respondent in the upper right is more likely to be so. The colour of the checkmarks denotes the stated intentions of the respondent: red for non-hesitant and blue for hesitant.

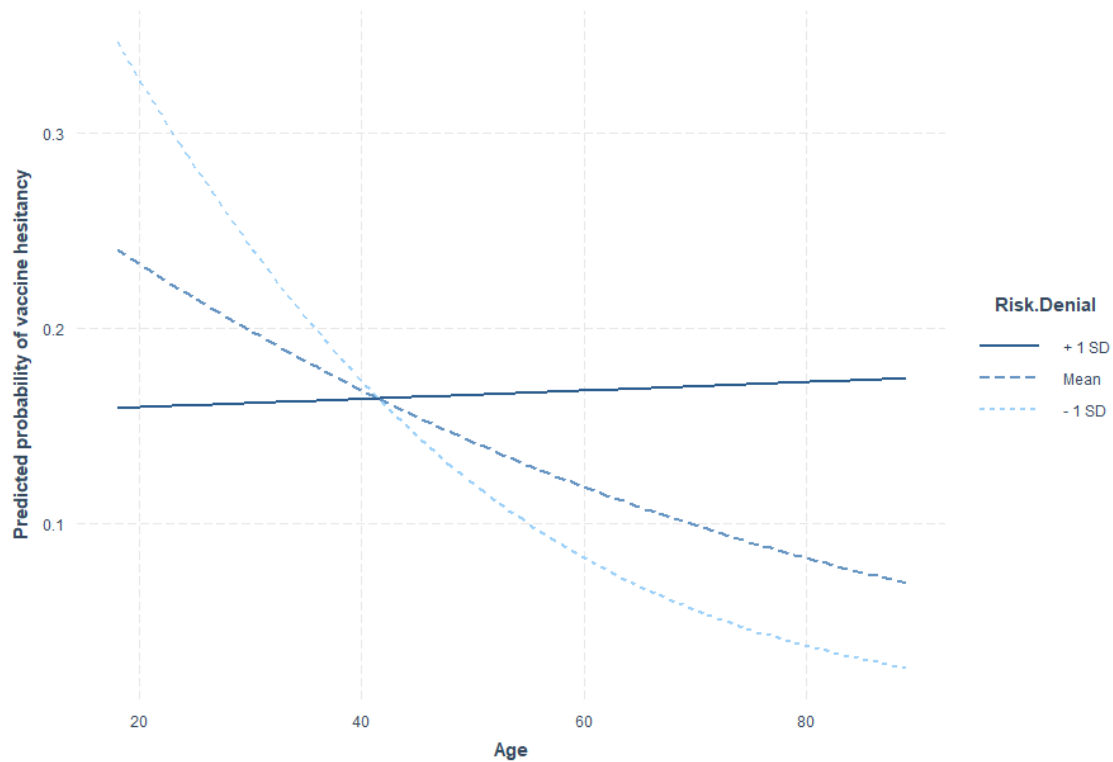


Figure 4: Interaction effect of risk denial and age

Figure 4 displays the interaction effect between the variables risk denial and age when all other variables are held equal. The y-axis shows predicted hesitancy towards having a vaccine against Covid-19 on a binary scale, from 0 to 1. This graph shows how the level of risk denial correlates to different vaccine intentions depending on the respondent's age, and how that is a significant determinant in understanding vaccine hesitancy. When risk denial is at the mean (.92), a young respondent is more likely to be hesitant than an older respondent – which is to be expected from the exploratory tests conducted earlier. Notably though, as the level of risk denial increases, this relationship is inversed, which is shown through the counterclockwise rotation of the curve. At one standard deviation above the mean (3.09), older respondents who consider their own risk to be lower than that of other people are less likely to get the vaccine than younger respondents who share this attitude towards risk.

Table 11: Estimated probabilities of vaccine hesitancy

		Risk denial	
		0	10
Age	20 years	0.35	0.06
	80 years	0.08	0.80

The estimated probabilities of vaccine hesitancy, when everything is held equal, show how risk denial causes old respondents to become more hesitant and young respondents to be more inclined towards having a vaccine against Covid-19.

This relationship between age and risk denial, and their effect on vaccine hesitancy, can be expressed in a matrix. When transforming the logit coefficients to probabilities, the above numbers are received. The highest probabilities of being vaccine hesitant are found among old respondents prone to risk denial, and young respondents with no risk denial at all.

5.5. Hypothesis conclusions

Here each null hypothesis is presented and, based on the above statistical analysis, rejected if possible. A brief discussion of each null hypothesis against relevant theory is provided.

5.5.1. H1

H1₀: Gender does not affect Covid-19 vaccine hesitancy: Failed to reject.

This is in line with the findings of Caserotti *et al.* (2021), who did not find gender to be a significant determinant of vaccine hesitancy either. It does however conflict with the findings of Freeman and Bentall (2017) and Dror *et al.* (2020), who found that men were more susceptible to conspiracy theory beliefs and that women were more vaccine hesitant, respectively. Possible explanations for this could include the fact that the previously mentioned studies were carried out on Italian, American and Israeli respondents, respectively, whilst this thesis is based on a Swedish sample. Additionally, it indicates that vaccine hesitancy cannot be explained through terms of conspiracy theory beliefs alone, as discrepancies evidently exist.

5.5.2. H2

H2₀: Age does not affect Covid-19 vaccine hesitancy: Rejected.

The findings presented here contradict those of both Dror *et al.* (2020) and Caserotti *et al.* (2021) in determining a statistically significant, negative correlation between age and vaccine hesitancy. As the surveyed populations do not overlap between any of the studies, cultural and circumstantial differences: public trust in institutions, media landscape, vaccine supply and others, cannot be excluded as possible reasons for the differences. However, due to the increased probability of developing severe illness after contraction of Covid-19 in elderly people, the increased willingness to get vaccinated with older age makes intuitive sense.

5.5.3. H3

H3₀: Region of residency does not affect Covid-19 vaccine hesitancy: Failed to reject.

The lack of a statistically significant difference in vaccine hesitancy between the different regions of Sweden, and its consequential lack of explanatory value, led to the variable being excluded from the regressions that were conducted later in the study. Had a significant pattern emerged, such as a difference in hesitancy levels between urban and rural areas, that would have been of practical interest to pursue but as it stood, geographical region was deemed redundant by the authors.

5.5.4. H4

H4₀: Unemployment does not affect Covid-19 vaccine hesitancy: Partially rejected.

The findings are aligned with those of Freeman and Bentall (2017) claiming that unemployed people are more likely to be susceptible to conspiracy theories and, followingly, vaccine hesitancy (Jolley and Douglas, 2014; Romer and Jamieson, 2020).

One explanatory factor as to why unemployment showed statistical significance from the one-way ANOVA but not from the regression analyses could be that one of the other employment categories being tested, retirement, shows correlation with the previously presented age variable. As retired people tend to be old, and age is shown to correlate negatively with vaccine hesitance with statistical significance, explanatory power from unemployment in its relation to retirement could stem from a difference in age.

5.5.5. H5

H5₀. Low income does not affect Covid-19 vaccine hesitancy: Rejected.

The explanatory route that citizens in a low income bracket are more prone to believe conspiracy theories and, thus, be vaccine-hesitant (Jolley and Douglas, 2014; Freeman and Bentall, 2017; Romer and Jamieson, 2020) holds here.

5.5.6. H6

H6₀: Socially conservative and right-wing political affiliations do not affect Covid-19 vaccine hesitancy: Rejected.

The agreement between research on vaccine hesitancy and conspiracy theories is striking (van Prooijen, Krouwel and Pollet, 2015; Krouwel *et al.*, 2017; Allcott *et al.*, 2020), and the rejection of the here presented null hypothesis aligns directly with previous findings. The apparent propensity of conservatives to be hesitant towards vaccination is both well-

established and worrying. Increasingly polarised and identity-based political climates, a current trend in many Western countries (Allcott *et al.*, 2020), could lead to significant reductions in vaccine uptake rates as political ideology starts playing a more prominent role in people's lives and as basis for their decisions.

5.5.7. H7

H7₀. Exposure to anti-vaccine content in social media does not affect Covid-19 vaccine hesitancy: Failed to reject.

The failure to reject this null hypothesis does insinuate that exposure to vaccine-critical content on social media has no effect on vaccine intentions. The authors, however, oppose this notion based on one key potential flaw in the collected data; the variable measuring exposure to vaccine-critical material online is dependent on respondents being aware enough of their own exposure to the relevant content to report seeing it.

As showed by Grant's *et al.* (2015) study of websites dedicated to pro- and anti-vaccination content, sites promoting anti-vaccine content are far more interactive and community based than their positive counterparts. Additionally, such sites tend to weigh positive and negative "facts" against each other to create the illusion of being impartial. These factors can contribute to people being unaware of their exposure to vaccine-critical content online. In order to more accurately determine whether this variable has any significant correlation with vaccine hesitancy, the measurement would have to be made independent of the respondents' own perceptions of social media content, perhaps by exposing randomly assigned groups to content from the different sides under laboratory conditions.

5.5.8. H8

H8₀. Opposing Net Zero carbon emissions does not affect Covid-19 vaccine hesitancy: Rejected.

One of the key similarities between conspiracy theories about climate change and the Covid-19 pandemic is that popular ones about both claim them to be mere hoaxes (Goertzel, 2010; Allcott *et al.*, 2020). If the belief that Covid-19 is a hoax is assumed to be true, that renders the need for mitigating actions against it, such as vaccination, completely pointless in the same way that it would be pointless to limit the emission of carbon dioxide into the atmosphere if the gas' effect on global warming was assumed to be false. Thus, it is unsurprising that a reluctance towards society's Net Zero carbon goals is correlated with a reluctance to vaccinate.

5.5.9. H9

H9₀. Having small children (age 0-4 years) does not affect Covid-19 vaccine hesitancy: Failed to reject.

Dror *et al.* (2020), who found a significant correlation between parenthood and vaccine hesitancy, argued that a possible explanation for their findings was that parenthood makes people more concerned for their own safety and, thus, more risk averse. The lack of significant findings here contradicts those findings and that theory. Here the authors hypothesise that the aforementioned risk aversion towards vaccination is equalled and matched by the risk aversion of falling ill from severe Covid-19.

5.5.10. H10

H10₀: Risk denial does not affect Covid-19 vaccine hesitancy: Rejected.

The fact that risk denial correlates with statistical significance to vaccine hesitancy confirms the notion that people who perceive the risk of contracting or falling seriously ill from Covid-19 to be lower for themselves than for the general population tend to consider the vaccine an unnecessary precaution. By adding the dimension that a sense of control and agency over one's situation affects risk denial positively, a conclusion can be drawn; people who feel in control of their personal Covid-19 situation also tend to be hesitant to vaccinate. Additionally, Sjöberg's (2000a) study did not let risk denial act as a dependent variable, rendering insights regarding what factors govern risk denial propensity impossible. Here, the authors present, with statistical significance, that young people are more prone to risk denial than old regarding Covid-19.

5.5.11. H11

H11₀: Views on imported goods, services, and workforce do not affect Covid-19 vaccine hesitancy: Failed to reject.

The failure to reject this null hypothesis implies that a globalist – nationalist rift in vaccine intentions is non-existent. It does not, however, completely contradict the findings of Bjereld and Demker (2020) that suggested TAN (Traditional, Authoritarian, Nationalist) tendencies to correlate with vaccine hesitancy, as this thesis only presents evidence regarding globalism.

5.5.12. H12

H12₀: Disapproval of authorities does not cause Covid-19 vaccine hesitancy: Rejected.

Confirming the hypothesis that people who report dissatisfaction with government institutions and authorities leads to the conclusion that the findings of Goertzel (1994) on the link between a lack of societal agency, belonging and satisfaction are confirmed to apply to vaccine hesitancy when supported by proof of links between conspiracy theory belief and vaccine hesitancy (Jolley and Douglas, 2014; Romer and Jamieson, 2020). Furthermore, if a parallel is drawn between dissatisfaction with government and distrust in the same (Goertzel, 1994), it opens for additional research regarding the links between vaccine intentions and institutional trust.

CONCLUSIONS

In this chapter, the findings and analysis of the study are evaluated from the perspectives of their theoretical and practical relevance. Additionally, suggestions for deepening the study in subsequent research are provided.

The aim of this thesis was to develop the understanding of whom becomes vaccine-hesitant, and why. This was studied 1) through the lens of risk perception and denial to establish the cognitive mechanics that act to make the decision and 2) against a backdrop of conspiracy theory research to highlight the influence of disinformation on those same cognitive systems. The presented results contribute to theory on risk denial (Sjöberg, 2000a, 2003a, 2003b) by confirming Sjöberg's findings on an additional hazard; Covid-19, as well as establish the link between risk denial and vaccine hesitancy. Additionally, confirming the correlations between vaccine hesitancy and socially conservative political views, a disapproval of government and disagreement with Net Zero targets, all in line with existing conspiracy theory research, further strengthens the suggestion that people prone to believe conspiracy theories are likely to also reject vaccination (Jolley and Douglas, 2014; Freeman and Bentall, 2017; Romer and Jamieson, 2020).

6.1. Scientific contributions

6.1.1. The Swedish experiment

The aforementioned global interest in Sweden's unique way of handling the Covid-19 pandemic created an interesting opportunity to write a thesis providing simultaneously a local focus and international noteworth.

A possible example of Sweden's *laissez faire* approach affecting vaccine intentions can be discerned when comparing the findings presented here with those of Caserotti *et al.* (2021). The polarity of correlation between age and vaccine hesitancy is inversed between the Italian and Swedish sample groups; in Italy young people are less vaccine hesitant than old whilst Swedes show the inverse relationship. This could be a consequence of the Swedish government's decision to not impose lockdowns on the population, thus rendering young people less anxious to get immunised and old people more anxious as they feel less safe.

Additionally, a striking conclusion can be drawn from the statistically significant correlation between distrust and disappointment in government authorities and vaccine hesitancy. As the strategy of the Public Health Agency has been largely reliant on public compliance with the official guidelines, a drop in trust and faith in such institutions would seriously damage the integrity of the strategy itself. Pair that with the fact that people who display distrust and disappointment also show signs of vaccine hesitancy and the importance of public institutions maintaining high levels of trust becomes undeniable. As shown in

[Table 2](#)

[Table 2](#), sympathisers of the opposition parties in general, and the Sweden Democrats in particular, are more sceptical of authorities' handling of the Covid-19 pandemic. Albeit unsurprising, it highlights that the discontent that could prove harmful to the success of the government's strategy is already a fact.

6.1.2. Risk denial conclusions

Accurately measuring vaccine intentions against risk perception and risk denial can add depth to the research topic of vaccine hesitancy. The presented interactional effect between risk denial and age on vaccine hesitancy can, for instance, highlight whether altruism or egoism is the primary driver of vaccine willingness.

For the purpose of this discussion, suppose that two people showing equal and high demand for being vaccinated display varying risk denial tendencies. The person with a high level of risk denial perceives the societal hazard to be significantly greater than that for themselves and therefore has, most likely, altruistic motives for vaccination. The logic behind this is that as the own perceived risk is low, the main reason for vaccination must be to protect those around, for whom the risk is perceived to be high. Conversely, with a low, or even negative, risk denial score one can assume the reasons for wanting to get vaccinated to be egoistic, grounded in self-protection.

How altruism and egoism may affect vaccine propensity can be discerned when examining the interaction effect between age and risk denial on vaccine hesitancy. [Table 11](#)~~Table 44~~ displays the estimated probabilities of vaccine hesitancy for young people (20 years old) and old (80 years old) crossed against risk denying people (10/10) and non-risk denying people (0/10). It can be seen a demonstration of the example given in the previous paragraph: the two hypothetical respondents who are predicted to be most likely to vaccinate is the young person vaccinating for arguably altruistic reasons, and the old person for egoistic reasons.

Conversely, the two respondents least likely to vaccinate is the young person who is gravely concerned with their health, and the old person who sees themselves to be in no risk at all compared to others.

This means that old people who find themselves to be in no greater risk to contract or fall seriously ill from Covid-19 than the people around them see very little point in getting vaccinated. Hence, when old people, who are in far greater danger from Covid-19 than younger people, see no egoistical benefit from vaccination, they do not find altruistic motive

to get vaccinated anyway as young people with similar risk perceptions do. As benefits are perceived to be low by this old person, it is likely that they perceive the risk to be high, as demonstrated by Finuncane et al. (2000). Although authorities say vaccination is harmless – why would one have a vaccine when it could only serve to endanger a satisfactory status quo (Ritov and Baron, 1992)?

The risk denial tendencies of people towards Covid-19 can also serve as an indication of how much in control people feel over their situations. As a sense of being in control is positively correlated with risk denial (Sjöberg, 2000a) a high mean score of risk denial amongst the surveyed population would indicate that people generally feel that they have the power to prevent and mitigate adverse outcomes from Covid-19.

It can have practical implications whether those mitigatory capabilities are real, or overestimated due to unawareness, as a consequence of incompetence (Kruger and Dunning, 1999). Should they indeed be induced by a lack of comprehension of one's own incapability, an old person learning about the severity of the situation could gain a greater understanding of how ill-equipped people actually are to mitigate the effects of Covid-19. This would in turn lessen their sense of control of the situation. Finally, that would decrease their sense of risk denial and, possibly, increase the will to get vaccinated.

6.2. Practical and empirical contributions

6.2.1. Socio-demographic conclusions

The contribution of this thesis towards science's ongoing attempts to map who is, and who is not, vaccine-hesitant is most likely that, on socio-demographic grounds alone, vaccine-hesitant people in Sweden share very few common denominators, making any attempt to narrowly target the most hesitant people difficult.

Through the study, important data were retrieved about the level of vaccine hesitancy in Sweden. According to the survey, 184 out of the 1016 respondents, corresponding to 18 percent, held unfavourable views towards having a Covid-19 vaccine. This number is higher than what the Swedish Public Health Agency has found in their studies of Covid-19 vaccine acceptance (Folkhälsomyndigheten, 2021), potentially indicating that the issue of vaccine hesitancy is more serious than the agency anticipates.

6.2.2. *Communicative framing*

The findings on risk denial and its impact on vaccine hesitancy have implications on how communication to increase acceptance of vaccination should be designed. Although not confirmed through tests in laboratory conditions, the results of the study indicate that the young respondents who are worried about the effects of the virus are also the ones who are the most hesitant towards the vaccine. Communicating a loss-frame stressing the risks of suffering from personal health consequences of the virus to young people could subsequently lead to them conflating the risk of the virus and the risk of the vaccine: an incapacitated state of dread. From the analysis, one could argue that a more advantageous communication would be based on reducing the stress on the personal gains of the vaccine for young people, and instead focus on serving the greater good of society. For older people, conversely, a loss-frame focusing on the health risks abstaining from vaccination could be more beneficial.

In short, an effective communicative strategy to increase vaccine acceptance could be to *increase* risk denial in the young, i.e. increase their concern for their fellow citizens, and to *decrease* risk denial in the old, i.e. making them aware that they too may succumb to the virus.

6.3. Suggestions for further research

6.3.1. Improving vaccine hesitancy prediction

As previously stated, it was considered uninteresting for the purposes of this thesis to gauge vaccine intentions on the basis of opinions on vaccines themselves as it would contribute with little new knowledge. Additionally, as type I errors were deemed more favourable than type II errors, favouring false positives over false negatives, the threshold for prediction was lowered from 50% to 20% in the binary regression. This loss of accuracy was considered justified for practical reasons as it would be more beneficial for an authority looking to increase vaccine uptake to accidentally target some vaccine positive people than to miss vaccine-hesitant people.

As the model presented in this thesis performed better than chance at predicting vaccine intentions it can act as a theoretical proof of concept viability. Had the scope for this thesis been greater than it is, the authors would have enriched the study with insights on people's general inclinations regarding level of tolerance, and perception, of risk. A similar study to those conducted by Sjöberg (2000a, 2003b) where the risk perception, and denial, of several hazards; 34 and 15, respectively, were established in large sample groups would lend context to the risk denial attitudes pertaining to Covid-19 and its vaccines, specifically. That would allow general risk denial attitudes, or lack thereof, to be controlled for in the regressions.

Additionally, including test of risk aversion in line with Kahneman's and Tversky's work on risk aversion within prospect theory (1979) could provide depth and contrast to the findings of a subsequent study as it would enable the establishment of a relationship between the respondents' general propensity to take risks, their perception and denial of the corresponding hazardous situation and their vaccine intentions. Adding some or all of, or even more than, the above discussed parameters to the survey data, would allow deeper and more well-founded conclusions to be drawn between certain aspects of behavioural psychology and vaccine intentions which could be highly informative for initiatives intent on raising global and local vaccine demand.

6.3.2. Other aspects of vaccine hesitancy

Though the focus of this thesis was placed solely on the influence of heuristics on decision making and, in turn, the effect of risk perception and conspiracy theories on heuristics, there are several other schools of theory regarding why people turn vaccine-hesitant. For comprehensive overviews of existing literature on the causes of vaccine hesitancy, see Dubé *et al.* (2013) and Yaqub *et al.* (2014).

6.4. So, who is vaccine hesitant?

Attempting to concisely conclude who indeed is vaccine hesitant unfortunately leaves the question unsatisfactorily unanswered. Note that in [Figure 3](#), which shows the accuracy of the vaccine intention prediction model that was developed through the binary regression, the data point in the uppermost righthand corner is red and not blue. This means that the one person of all the 1,016 respondents in the data sample who is statistically the most likely to be vaccine hesitant turned out to be positive towards them.

At the end of the day, no model can perfectly predict human behaviour and, just like Rosenbaum's hairdresser, people will continue to surprise and astonish observers forever. Personally, the authors are glad that the most flagrant outlier turned out to be a false positive instead of a negative. After countless disheartening accounts of nurses refusing vaccines despite their profession it is refreshing to imagine someone who is the least likely to get vaccinated doing so – the idea of a young, uneducated gambler in a MAGA hat with his sleeve rolled up for the shot is as funny as it is inspiring.

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APPENDIX

Below is a complete list of all the questions the respondents were subjected to. All answer alternatives and the frequency of responses to these are presented.

ID	Name	Type	Label	Values	Value Labels	Freq.	%
1	respid	numeric	ResplD	range: 32-7491			
2	uuid	character	UUID	<output omitted>		<output omitted>	<output omitted>
3	dCountry	numeric	DCOUNTRY. Country	1	USA	0	0.00
				2	Germany	0	0.00
				3	Sweden	1016	100.00
				4	Japan	0	0.00
				5	France	0	0.00
4	S1	numeric	S1. Are you...?	1	Male	501	49.31
				2	Female	515	50.69
				95	Other	0	0.00
5	S2	numeric	S2. What is your age?	range: 18-89			
6	dAge	numeric	DAGE.Age breaks	1	Under 18	0	0.00
				2	18-24	126	12.40
				3	25-34	162	15.94
				4	35-44	160	15.75
				5	45-54	167	16.44
				6	55-64	159	15.65
				7	65+	242	23.82
				1	Blekinge län	17	1.67
				2	Dalarnas län	36	3.54
				3	Gävleborgs län	27	2.66
7	S3SE	numeric	S3SE. What region do you live in? - SE	4	Gotlands län	10	0.98
				5	Hallands län	34	3.35
				6	Jämtlands län	13	1.28
				7	Jönköpings län	32	3.15
				8	Kalmar län	29	2.85
				9	Kronobergs län	15	1.48
				10	Norrbottnens län	20	1.97
				11	Örebro län	38	3.74
				12	Östergötlands län	47	4.63
				13	Skåne län	138	13.58
				14	Södermanlands län	25	2.46
				15	Stockholms län	221	21.75
				16	Uppsalas län	39	3.84
				17	Värmlands län	21	2.07
				18	Västerbottens län	23	2.26
8	regSE	numeric	REGSE. Region recode SE	19	Västernorrlands län	31	3.05
				20	Västmanlands län	28	2.76
				21	Västra Götalands län	172	16.93
				1	South East	123	12.11
				2	South	155	15.26
				3	West	206	20.28
9	S4	numeric	S4. Which of the following best describes	4	Middle	122	12.01
				5	North	87	8.56
				6	East	323	31.79
				1	Full time (30 hours a week or more)	376	37.01
				2	Part time (8 to 29 hours a week)	131	12.89
				3	Unemployed	80	7.87

10	S5SE	numeric	your employment status?	4	Retired	268	26.38
				5	In full time education	78	7.68
				6	In part time education	8	0.79
				7	Full time homemaker/housewife	8	0.79
				8	On parental leave	17	1.67
				9	Not working - other reasons	48	4.72
				10	On furlough / short-time work	2	0.20
				1	Mindre än 100,000 kr	73	7.19
				2	100,000 kr - 199,999 kr	124	12.20
				3	200,000 kr - 299,999 kr	156	15.35
				4	300,000 kr - 399,999 kr	146	14.37
				5	400,000 kr - 499,999 kr	96	9.45
				6	500,000 kr - 599,999 kr	109	10.73
				7	600,000 kr - 699,999 kr	59	5.81
				8	700,000 kr - 799,999 kr	56	5.51
				9	800,000 kr - 899,999 kr	40	3.94
				10	900,000 kr - 999,999 kr	19	1.87
				11	Mer än 1,000,000 kr	32	3.15
				95	Prefer not to answer	106	10.43
11	S6SE	numeric	S6SE. What is the total annual income of your household before tax?	1	The Left Party	88	8.66
				2	The Green Party	44	4.33
				3	The Social Democrats	216	21.26
				4	The Center Party	33	3.25
				5	The Liberals	24	2.36
				6	The Moderate Party	158	15.55
				7	The Christian Democrats	32	3.15
				8	The Sweden Democrats	236	23.23
				9	Other	36	3.54
				10	Don't know/don't want to tell	149	14.67
12	Q1_1	numeric	Q1. On a scale of 1-10, 1 being not at all and 10 being very much, how concerned are you about the impact of Coronavirus on: - Your personal health	1	1 - not at all	84	8.27
				2	2	55	5.41
				3	3	76	7.48
				4	4	89	8.76
				5	5	131	12.89
				6	6	132	12.99
				7	7	137	13.48
				8	8	115	11.32
				9	9	68	6.69
				10	10 - very much	129	12.70
13	Q1_2	numeric	Q1. On a scale of 1-10, 1 being not at all and 10 being very much, how concerned are you about the impact of Coronavirus on: - Your family's health	1	1 - not at all	40	3.94
				2	2	36	3.54
				3	3	64	6.30
				4	4	64	6.30
				5	5	131	12.89
				6	6	105	10.33
				7	7	138	13.58
				8	8	139	13.68
				9	9	102	10.04
				10	10 - very much	197	19.39
14	Q1_3	numeric	Q1. On a scale of 1-10, 1 being not at all and 10 being very much, how concerned are you about the impact of Coronavirus on: - The health of people	1	1 - not at all	25	2.46
				2	2	19	1.87
				3	3	35	3.44
				4	4	50	4.92
				5	5	137	13.48
				6	6	171	16.83
				7	7	180	17.72
				8	8	173	17.03
				9	9	81	7.97
				10	10 - very much	145	14.27

			in the country as a whole				
			Q1. On a scale of 1-10, 1 being not at all and 10 being very much, how concerned are you about the impact of Coronavirus on: - The economy as a whole	1	1 - not at all	36	3.54
				2	2	18	1.77
				3	3	39	3.84
				4	4	58	5.71
15	Q1_4	numeric		5	5	139	13.68
				6	6	138	13.58
				7	7	164	16.14
				8	8	181	17.81
				9	9	84	8.27
				10	10 - very much	159	15.65
			Q1. On a scale of 1-10, 1 being not at all and 10 being very much, how concerned are you about the impact of Coronavirus on: - Businesses in my local area	1	1 - not at all	47	4.63
				2	2	24	2.36
				3	3	57	5.61
				4	4	80	7.87
				5	5	147	14.47
16	Q1_5	numeric		6	6	143	14.07
				7	7	188	18.50
				8	8	156	15.35
				9	9	58	5.71
				10	10 - very much	116	11.42
			Q1. On a scale of 1-10, 1 being not at all and 10 being very much, how concerned are you about the impact of Coronavirus on: - Businesses in the country as a whole	1	1 - not at all	32	3.15
				2	2	21	2.07
				3	3	42	4.13
				4	4	63	6.20
				5	5	132	12.99
				6	6	155	15.26
				7	7	189	18.60
				8	8	160	15.75
				9	9	89	8.76
				10	10 - very much	133	13.09
			Q1. On a scale of 1-10, 1 being not at all and 10 being very much, how concerned are you about the impact of Coronavirus on: - Your own job	1	1 - not at all	83	16.37
				2	2	36	7.10
				3	3	39	7.69
				4	4	46	9.07
				5	5	68	13.41
				6	6	48	9.47
				7	7	61	12.03
				8	8	51	10.06
				9	9	32	6.31
				10	10 - very much	43	8.48
			Q1. On a scale of 1-10, 1 being not at all and 10 being very much, how concerned are you about the impact of Coronavirus on: - Your own household finances	1	1 - not at all	121	11.91
				2	2	62	6.10
				3	3	90	8.86
				4	4	91	8.96
				5	5	146	14.37
				6	6	100	9.84
				7	7	125	12.30
				8	8	88	8.66
				9	9	68	6.69
				10	10 - very much	125	12.30
			Q17SE. For each of the following organisations, please indicate how well or badly it has done in responding to the coronavirus crisis. - The Swedish government	1	Very well	76	7.48
				2	Quite well	248	24.41
				3	Neither well nor badly	209	20.57
				4	Quite badly	235	23.13
				5	Very badly	229	22.54
				6	Don't know	19	1.87
20	Q17SE_1	numeric					

21	Q17SE_2	numeric	Q17SE. For each of the				
			following organisations,	1	Very well	85	8.37
			please indicate how well	2	Quite well	228	22.44
			or badly it has done in	3	Neither well nor badly	196	19.29
			responding to the	4	Quite badly	197	19.39
			coronavirus crisis. - The	5	Very badly	293	28.84
			Prime	6	Don't know	17	1.67
			Minister, Stefan Löfven				
22	Q17SE_3	numeric	Q17SE. For each of the				
			following organisations,	1	Very well	112	11.02
			please indicate how well	2	Quite well	324	31.89
			or badly it has done in	3	Neither well nor badly	222	21.85
			responding to the	4	Quite badly	187	18.41
			coronavirus crisis. -	5	Very badly	160	15.75
			Public	6	Don't know	11	1.08
			Health Agency of				
			Sweden				
23	Q17SE_4	numeric	Q17SE. For each of the				
			following organisations,	1	Very well	54	5.31
			please indicate how well	2	Quite well	300	29.53
			or badly it has done in	3	Neither well nor badly	339	33.37
			responding to the	4	Quite badly	183	18.01
			coronavirus crisis. -	5	Very badly	84	8.27
			Local	6	Don't know	56	5.51
			government				
24	Q17SE_5	numeric	Q17SE. For each of the				
			following organisations,	1	Very well	393	38.68
			please indicate how well	2	Quite well	379	37.30
			or badly it has done in	3	Neither well nor badly	131	12.89
			responding to the	4	Quite badly	66	6.50
			coronavirus crisis. -	5	Very badly	33	3.25
			Healthcare	6	Don't know	14	1.38
			providers				
25	Q17SE_6	numeric	Q17SE. For each of the				
			following organisations,	1	Very well	92	9.06
			please indicate how well	2	Quite well	338	33.27
			or badly it has done in	3	Neither well nor badly	290	28.54
			responding to the	4	Quite badly	115	11.32
			coronavirus crisis. -	5	Very badly	80	7.87
			World	6	Don't know	101	9.94
			Health Organisation				
			(WHO)				
26	Q17SE_7	numeric	Q17SE. For each of the				
			following organisations,	1	Very well	160	15.75
			please indicate how well	2	Quite well	458	45.08
			or badly it has done in	3	Neither well nor badly	233	22.93
			responding to the	4	Quite badly	110	10.83
			coronavirus crisis. -	5	Very badly	34	3.35
			Food,	6	Don't know	21	2.07
			convenience and other				
			essential retailers				
27	Q17SE_8	numeric	Q17SE. For each of the				
			following organisations,	1	Very well	314	30.91
			please indicate how well	2	Quite well	379	37.30
			or badly it has done in	3	Neither well nor badly	187	18.41
			responding to the	4	Quite badly	36	3.54
			coronavirus crisis. -	5	Very badly	10	0.98
			Online	6	Don't know	90	8.86
			retailers				

28	Q17SE_9	numeric	Q17SE. For each of the following organisations, please indicate how well or badly it has done in responding to the coronavirus crisis. - Financial services companies, including banks	1	Very well	102	10.04
				2	Quite well	285	28.05
				3	Neither well nor badly	338	33.27
				4	Quite badly	84	8.27
				5	Very badly	41	4.04
				6	Don't know	166	16.34
29	Q17SE_10	numeric	Q17SE. For each of the following organisations, please indicate how well or badly it has done in responding to the coronavirus crisis. - Manufacturing companies	1	Very well	86	8.46
				2	Quite well	346	34.06
				3	Neither well nor badly	301	29.63
				4	Quite badly	57	5.61
				5	Very badly	25	2.46
				6	Don't know	201	19.78
30	Q17SE_11	numeric	Q17SE. For each of the following organisations, please indicate how well or badly it has done in responding to the coronavirus crisis. - Utilities, like telephone and power companies	1	Very well	120	11.81
				2	Quite well	325	31.99
				3	Neither well nor badly	315	31.00
				4	Quite badly	75	7.38
				5	Very badly	28	2.76
				6	Don't know	153	15.06
31	Q17SE_12	numeric	Q17SE. For each of the following organisations, please indicate how well or badly it has done in responding to the coronavirus crisis. - Newspaper and television media	1	Very well	111	10.93
				2	Quite well	326	32.09
				3	Neither well nor badly	281	27.66
				4	Quite badly	136	13.39
				5	Very badly	91	8.96
				6	Don't know	71	6.99
32	Q17SE_13	numeric	Q17SE. For each of the following organisations, please indicate how well or badly it has done in responding to the coronavirus crisis. - Social media	1	Very well	99	9.74
				2	Quite well	225	22.15
				3	Neither well nor badly	332	32.68
				4	Quite badly	158	15.55
				5	Very badly	89	8.76
				6	Don't know	113	11.12
33	Q17SE_14	numeric	Q17SE. For each of the following organisations, please indicate how well or badly it has done in responding to the coronavirus crisis. - The European Union	1	Very well	64	6.30
				2	Quite well	244	24.02
				3	Neither well nor badly	330	32.48
				4	Quite badly	166	16.34
				5	Very badly	102	10.04
				6	Don't know	110	10.83
34	Q3_4	numeric	Q3. How strongly do you agree or disagree with the following statements? - I expect to lose my job	1	Agree strongly	53	5.22
				2	Agree slightly	76	7.48
				3	Neither agree nor disagree	228	22.44
				4	Disagree slightly	101	9.94
				5	Disagree strongly	423	41.63
				99	Don't know	135	13.29
35	Q3_5	numeric	Q3. How strongly do you agree or disagree with the	1	Agree strongly	99	9.74
				2	Agree slightly	179	17.62
				3	Neither agree nor disagree	243	23.92

			following statements? - I	4	Disagree slightly	112	11.02
			am worried that my	5	Disagree strongly	220	21.65
			company overall might	99	Don't know	163	16.04
			collapse				
			Q3. How strongly do	1	Agree strongly	86	8.46
			you agree or disagree	2	Agree slightly	84	8.27
			with the	3	Neither agree nor disagree	150	14.76
			following statements? - I	4	Disagree slightly	67	6.59
			have already lost my job	5	Disagree strongly	556	54.72
				99	Don't know	73	7.19
			Q3. How strongly do				
			you agree or disagree	1	Agree strongly	99	9.74
			with the	2	Agree slightly	364	35.83
			following statements? -	3	Neither agree nor disagree	299	29.43
			Overall businesses in my	4	Disagree slightly	137	13.48
			country are stepping up	5	Disagree strongly	43	4.23
			during the coronavirus	99	Don't know	74	7.28
			outbreak				
			Q3. How strongly do				
			you agree or disagree	1	Agree strongly	86	8.46
			with the	2	Agree slightly	213	20.96
			following statements? -	3	Neither agree nor disagree	256	25.20
			The government in my	4	Disagree slightly	215	21.16
			country is giving	5	Disagree strongly	135	13.29
			businesses the support it	99	Don't know	111	10.93
			needs				
			during this crisis				
			Q3. How strongly do				
			you agree or disagree				
			with the	1	Agree strongly	69	6.79
			following statements? -	2	Agree slightly	180	17.72
			The business support the	3	Neither agree nor disagree	278	27.36
			government in my	4	Disagree slightly	204	20.08
			country has announced	5	Disagree strongly	129	12.70
			is getting	99	Don't know	156	15.35
			through to the				
			companies that really				
			need it				
				1	'Til the end of April	0	0.00
				2	'Til the end of May	0	0.00
				3	'Til the end of June	0	0.00
				4	'Til the end of Summer	0	0.00
			Q9. For each of the	5	'Til the end of 2020	0	0.00
			following effects of the	6	Longer than a year	289	28.44
			Coronavirus outbreak	7	Longer than two years	211	20.77
			please say how long you	8	'Til the end of July	0	0.00
			think	9	'Til the end of September	0	0.00
			it will last? - The impact	10	'Til the end of Autumn	0	0.00
			on society overall	11	'Til the end of November	0	0.00
				12	'Til the end of March	51	5.02
				13	'Til the end of June	74	7.28
				14	'Til the end of September	114	11.22
				15	'Til the end of 2021	277	27.26
			Q9. For each of the	1	'Til the end of April	0	0.00
			following effects of the	2	'Til the end of May	0	0.00
			Coronavirus outbreak	3	'Til the end of June	0	0.00
			please say how long you	4	'Til the end of Summer	0	0.00
			think	5	'Til the end of 2020	0	0.00
				6	Longer than a year	319	31.40

			it will last? - The impact on my country	7	Longer than two years	241	23.72
				8	'Til the end of July	0	0.00
				9	'Til the end of September	0	0.00
				10	'Til the end of Autumn	0	0.00
				11	'Til the end of November	0	0.00
				12	'Til the end of March	22	2.17
				13	'Til the end of June	58	5.71
				14	'Til the end of September	90	8.86
				15	'Til the end of 2021	286	28.15
				1	'Til the end of April	0	0.00
				2	'Til the end of May	0	0.00
				3	'Til the end of June	0	0.00
				4	'Til the end of Summer	0	0.00
				5	'Til the end of 2020	0	0.00
				42	Q9_3	numeric	Q9. For each of the following effects of the Coronavirus outbreak please say how long you think it will last? - The impact on travel and holidays
7	Longer than two years	169	16.63				
8	'Til the end of July	0	0.00				
9	'Til the end of September	0	0.00				
10	'Til the end of Autumn	0	0.00				
11	'Til the end of November	0	0.00				
12	'Til the end of March	21	2.07				
13	'Til the end of June	86	8.46				
14	'Til the end of September	125	12.30				
15	'Til the end of 2021	276	27.17				
1	'Til the end of April	0	0.00				
2	'Til the end of May	0	0.00				
3	'Til the end of June	0	0.00				
4	'Til the end of Summer	0	0.00				
5	'Til the end of 2020	0	0.00				
43	Q9_4	numeric	Q9. For each of the following effects of the Coronavirus outbreak please say how long you think it will last? - The impact on the economy	6	Longer than a year	310	30.51
				7	Longer than two years	364	35.83
				8	'Til the end of July	0	0.00
				9	'Til the end of September	0	0.00
				10	'Til the end of Autumn	0	0.00
				11	'Til the end of November	0	0.00
				12	'Til the end of March	22	2.17
				13	'Til the end of June	42	4.13
				14	'Til the end of September	64	6.30
				15	'Til the end of 2021	214	21.06
				1	'Til the end of April	0	0.00
				2	'Til the end of May	0	0.00
				3	'Til the end of June	0	0.00
				4	'Til the end of Summer	0	0.00
				5	'Til the end of 2020	0	0.00
44	Q9_5	numeric	Q9. For each of the following effects of the Coronavirus outbreak please say how long you think it will last? - The impact on businesses and how they function	6	Longer than a year	363	35.73
				7	Longer than two years	289	28.44
				8	'Til the end of July	0	0.00
				9	'Til the end of September	0	0.00
				10	'Til the end of Autumn	0	0.00
				11	'Til the end of November	0	0.00
				12	'Til the end of March	16	1.57
				13	'Til the end of June	48	4.72
				14	'Til the end of September	75	7.38
				15	'Til the end of 2021	225	22.15
				1	'Til the end of April	0	0.00
				2	'Til the end of May	0	0.00
				3	'Til the end of June	0	0.00
				4	'Til the end of Summer	0	0.00
				5	'Til the end of 2020	0	0.00
45	Q9_6	numeric	Q9. For each of the following effects of the Coronavirus outbreak please say how long you think	1	'Til the end of April	0	0.00
				2	'Til the end of May	0	0.00
				3	'Til the end of June	0	0.00
				4	'Til the end of Summer	0	0.00
				5	'Til the end of 2020	0	0.00

		it will last? - The impact on your own household finances	6	Longer than a year	200	19.69
			7	Longer than two years	156	15.35
			8	'Til the end of July	0	0.00
			9	'Til the end of September	0	0.00
			10	'Til the end of Autumn	0	0.00
			11	'Til the end of November	0	0.00
			12	'Til the end of March	191	18.80
			13	'Til the end of June	88	8.66
			14	'Til the end of September	127	12.50
			15	'Til the end of 2021	254	25.00
			1	'Til the end of April	0	0.00
			2	'Til the end of May	0	0.00
			3	'Til the end of June	0	0.00
			4	'Til the end of Summer	0	0.00
		Q9. For each of the following effects of the Coronavirus outbreak please say how long you think it will last? - The impact on your own life	5	'Til the end of 2020	0	0.00
			6	Longer than a year	253	24.90
			7	Longer than two years	205	20.18
			8	'Til the end of July	0	0.00
			9	'Til the end of September	0	0.00
			10	'Til the end of Autumn	0	0.00
			11	'Til the end of November	0	0.00
			12	'Til the end of March	90	8.86
			13	'Til the end of June	90	8.86
			14	'Til the end of September	87	8.56
			15	'Til the end of 2021	291	28.64
				The priority for the Government should be to limit the spread of the disease and the number of deaths, even if that mean	478	47.05
			2	The priority for the Government should be to avert a major recession or depression, protecting many jobs and businesses,	294	28.94
			99	Don't know	244	24.02
				Measures to help the environment and climate		
			1	Measures to help society and people	263	25.89
			2	Measures to ensure good governance and the way they conduct themselves	475	46.75
			3	None of these: Business should carry on as before	102	10.04
			4	Don't know	97	9.55
			5		79	7.78
		Q20. Which of the following do you think it is most important for businesses to focus on after coronavirus?				
		Q22_10. What do you view as the biggest obstacles you face when it comes to returning to your usual workplace? - Other			<output omitted>	<output omitted>
			1	I am self-employed / working as freelancer	68	13.41
			2	I am working in the public sector	132	26.04
			3	I am working in a small company with fewer than 50 employees	120	23.67
			4	I am working in a medium-sized company with 50-300 employees	83	16.37
			5	I am working in a large company	91	17.95
			6		13	2.56
		S4A. Please indicate your current working status.				

					with more than 300 employees Other		
51	Q28	character	Q28. In a sentence what is the one thing you want your employer to do differently after the coronavirus pandemic?			<output omitted>	<output omitted>
52	Q28dk	numeric	Q28. In a sentence what is the one thing you want your employer to do differently after the coronavirus pandemic? - Don't know	0 1	Not selected Selected	1016 0	100.00 0.00
53	Q29	numeric	Q29. Are you currently working at your normal and regular workplace?	1 2 3 4 5	Yes – I am working at my normal and regular workplace most/all days of the week Yes – I am working at my normal and regular workplace for some days of the week Yes – I am working at my normal and regular workplace for one day a week No – I am working at home/elsewhere Not applicable	281 93 27 80 26	55.42 18.34 5.33 15.78 5.13
54	Q40x1dk	numeric	Q40. Which % of the population in your country do you think... - Have had coronavirus - Don't know	0 1	Not selected Selected	1016 0	100.00 0.00
55	Q40x2dk	numeric	Q40. Which % of the population in your country do you think... - Currently have coronavirus - Don't know	0 1	Not selected Selected	1016 0	100.00 0.00
56	Q40x3dk	numeric	Q40. Which % of the population in your country do you think... - Have been badly ill with coronavirus - Don't know	0 1	Not selected Selected	1016 0	100.00 0.00
57	Q40x4dk	numeric	Q40. Which % of the population in your country do you think... - Have died from coronavirus - Don't know	0 1	Not selected Selected	1016 0	100.00 0.00
58	S4b	numeric	S4b. Does the company you work for...	1 2 3	Have headquarters in my country Have headquarters outside of my country Don't know	263 23 8	89.46 7.82 2.72
59	S7_1	numeric	S7. Do you have any children aged 18 or	0 1	Not selected Selected	297 719	29.23 70.77

			under? If so, how old are they? - No children aged 18 or under				
60	S7_2	numeric	S7. Do you have any children aged 18 or under? If 0 so, how old are they? - 1 Yes - children aged 0 to 12 months	Not selected Selected	953 63	93.80 6.20	
61	S7_3	numeric	S7. Do you have any children aged 18 or under? If 0 so, how old are they? - 1 Yes - children aged 13 months to 4 years old	Not selected Selected	951 65	93.60 6.40	
62	S7_4	numeric	S7. Do you have any children aged 18 or under? If 0 so, how old are they? - 1 Yes - children aged 5 to 10 years old	Not selected Selected	918 98	90.35 9.65	
63	S7_5	numeric	S7. Do you have any children aged 18 or under? If 0 so, how old are they? - 1 Yes - children aged 11 to 15 years old	Not selected Selected	902 114	88.78 11.22	
64	S7_6	numeric	S7. Do you have any children aged 18 or under? If 0 so, how old are they? - 1 Yes - children aged 16 to 18 years old	Not selected Selected	959 57	94.39 5.61	
65	S7_7	numeric	S7. Do you have any children aged 18 or under? If 0 so, how old are they? - 1 Prefer not to answer	Not selected Selected	1002 14	98.62 1.38	
66	Q17SE_15	numeric	Q17SE. For each of the following organisations, please indicate how well or badly it has done in responding to the coronavirus crisis. - The chemical industry	1 Very well 2 Quite well 3 Neither well nor badly 4 Quite badly 5 Very badly 6 Don't know	50 174 332 84 36 340	4.92 17.13 32.68 8.27 3.54 33.46	
67	Q17SE_16	numeric	Q17SE. For each of the following organisations, please indicate how well or badly it has done in responding to the coronavirus crisis. - The automotive/car industry	1 Very well 2 Quite well 3 Neither well nor badly 4 Quite badly 5 Very badly 6 Don't know	64 228 324 68 27 305	6.30 22.44 31.89 6.69 2.66 30.02	
68	Q17SE_17	numeric	Q17SE. For each of the following organisations, please indicate how well	1 Very well 2 Quite well 3 Neither well nor badly	145 367 250	14.27 36.12 24.61	

			or badly it has done in responding to the coronavirus crisis. - The pharmaceutical industry	4 5 6	Quite badly Very badly Don't know	104 60 90	10.24 5.91 8.86
				1	I would definitely do so	479	47.15
				2	Very likely	143	14.07
			Q49. How likely or unlikely would you be to choose	3	Quite likely	116	11.42
				4	Quite unlikely	67	6.59
69	Q49	numeric	to have that vaccine within a few weeks of it being released?	5	Very unlikely	47	4.63
				6	I would definitely not do so	70	6.89
				7	Don't know	65	6.40
				8	I have already received a coronavirus vaccine	29	2.85
			Q3. How strongly do you agree or disagree with the	1	Agree strongly	197	19.39
				2	Agree slightly	301	29.63
			following statements? -	3	Neither agree nor disagree	273	26.87
70	Q3_72	numeric	2021 will be a better year	4	Disagree slightly	90	8.86
			than 2020	5	Disagree strongly	57	5.61
				99	Don't know	98	9.65
			Q3. How strongly do you agree or disagree with the	1	Agree strongly	228	22.44
				2	Agree slightly	249	24.51
			following statements? - I	3	Neither agree nor disagree	179	17.62
71	Q3_74	numeric	have seen anti-vaccine information on social media in the last few weeks	4	Disagree slightly	114	11.22
				5	Disagree strongly	168	16.54
				99	Don't know	78	7.68
			Q63. What will be the most important factors in your decision whether to go on holiday to a particular country in	0	Not selected	549	54.04
72	Q63_1	numeric	2021? Choose up to	1	Selected	467	45.96
			three, in order of importance. - That I have had a vaccine				
			Q63. What will be the most important factors in your decision whether to go on holiday to a particular country in	0	Not selected	798	78.54
73	Q63_2	numeric	2021? Choose up to	1	Selected	218	21.46
			three, in order of importance. - That the local population have access to a vaccine				
			Q63. What will be the most important factors in your decision whether to go on holiday to a particular country in	0	Not selected	744	73.23
74	Q63_3	numeric	2021? Choose up to	1	Selected	272	26.77
			three, in order of importance. - That only people who have had a vaccine can enter				

75	Q63_4	numeric	Q63. What will be the most important factors in your decision whether to go on holiday to a particular country in 2021? Choose up to three, in order of importance. - That there is no need to quarantine when in the country	0 1	Not selected Selected	778 238	76.57 23.43
76	Q63_5	numeric	Q63. What will be the most important factors in your decision whether to go on holiday to a particular country in 2021? Choose up to three, in order of importance. - That there is no need to quarantine when returning to my country	0 1	Not selected Selected	818 198	80.51 19.49
77	Q63_6	numeric	Q63. What will be the most important factors in your decision whether to go on holiday to a particular country in 2021? Choose up to three, in order of importance. - Not having to have a test before or on arrival	0 1	Not selected Selected	878 138	86.42 13.58
78	Q63_7	numeric	Q63. What will be the most important factors in your decision whether to go on holiday to a particular country in 2021? Choose up to three, in order of importance. - Falling case numbers globally	0 1	Not selected Selected	718 298	70.67 29.33
79	Q63_8	numeric	Q63. What will be the most important factors in your decision whether to go on holiday to a particular country in 2021? Choose up to three, in order of importance. - Falling case numbers in the country I am travelling to	0 1	Not selected Selected	720 296	70.87 29.13
80	Q63_9	numeric	Q63. What will be the most important factors in your decision whether to go on holiday to a particular country in	0 1	Not selected Selected	928 88	91.34 8.66

			2021? Choose up to three, in order of importance. - That I have been to the country before				
			Q63. What will be the most important factors in your decision whether to go on holiday to a particular country in 2021? Choose up to three, in order of importance. - That the country makes mask-wearing compulsory in public spaces				
81	Q63_10	numeric	2021? Choose up to three, in order of importance. - That the country makes mask-wearing compulsory in public spaces	0 1	Not selected Selected	889 127	87.50 12.50
			Q63. What will be the most important factors in your decision whether to go on holiday to a particular country in 2021? Choose up to three, in order of importance. - None of the above				
82	Q63_99	numeric	Q63. What will be the most important factors in your decision whether to go on holiday to a particular country in 2021? Choose up to three, in order of importance. - None of the above	0 1	Not selected Selected	780 236	76.77 23.23
			Q75. After the coronavirus pandemic is over, some have argued there should be an increase in taxation to pay off national debts. For each of the following industries, please indicate... - Food, convenience and other essential retailers	1 2 3 4	Should pay more tax than before Should pay less tax than before Should pay the same level of tax as before Don't know	119 214 589 94	11.71 21.06 57.97 9.25
			Q75. After the coronavirus pandemic is over, some have argued there should be an increase in taxation to pay off national debts. For each of the following industries, please indicate... - Online retailers				
84	Q75_2	numeric	Q75. After the coronavirus pandemic is over, some have argued there should be an increase in taxation to pay off national debts. For each of the following industries, please indicate... - Online retailers	1 2 3 4	Should pay more tax than before Should pay less tax than before Should pay the same level of tax as before Don't know	267 142 521 86	26.28 13.98 51.28 8.46
			Q75. After the coronavirus pandemic is over, some have argued there should be an increase in taxation to pay off national debts. For each of the following industries, please indicate... -				
85	Q75_3	numeric	Q75. After the coronavirus pandemic is over, some have argued there should be an increase in taxation to pay off national debts. For each of the following industries, please indicate... -	1 2 3 4	Should pay more tax than before Should pay less tax than before Should pay the same level of tax as before Don't know	446 119 350 101	43.90 11.71 34.45 9.94

			Financial services companies, including banks				
			Q75. After the coronavirus pandemic is over, some have argued there should be an increase in	1			
86	Q75_4	numeric	taxation to pay off	2	Should pay more tax than before	169	16.63
			national debts. For each	3	Should pay less tax than before	177	17.42
			of	4	Should pay the same level of tax as before	542	53.35
			the following industries, please indicate... - Manufacturing companies		Don't know	128	12.60
			Q75. After the coronavirus pandemic is over, some have argued there should be an increase in	1			
87	Q75_5	numeric	taxation to pay off	2	Should pay more tax than before	195	19.19
			national debts. For each	3	Should pay less tax than before	158	15.55
			of	4	Should pay the same level of tax as before	550	54.13
			the following industries, please indicate... - Utilities, like telephone and power companies		Don't know	113	11.12
			Q75. After the coronavirus pandemic is over, some have argued there should be an increase in	1			
88	Q75_6	numeric	taxation to pay off	2	Should pay more tax than before	265	26.08
			national debts. For each	3	Should pay less tax than before	122	12.01
			of	4	Should pay the same level of tax as before	472	46.46
			the following industries, please indicate... - The chemical industry		Don't know	157	15.45
			Q75. After the coronavirus pandemic is over, some have argued there should be an increase in	1			
89	Q75_7	numeric	taxation to pay off	2	Should pay more tax than before	280	27.56
			national debts. For each	3	Should pay less tax than before	137	13.48
			of	4	Should pay the same level of tax as before	476	46.85
			the following industries, please indicate... - The automotive/car industry		Don't know	123	12.11
			Q75. After the coronavirus pandemic is over, some have argued there should be an increase in	1			
90	Q75_8	numeric	taxation to pay off	2	Should pay more tax than before	250	24.61
			national debts. For each	3	Should pay less tax than before	186	18.31
			of	4	Should pay the same level of tax as before	473	46.56
			the following industries,		Don't know	107	10.53

			please indicate... - The pharmaceutical industry				
			Q75. After the coronavirus pandemic is over, some have argued there should be an increase in taxation to pay off national debts. For each of the following industries, please indicate... - The leisure/hospitality sector				
91	Q75_9	numeric	1	Should pay more tax than before	168	16.54	
			2	Should pay less tax than before	309	30.41	
			3	Should pay the same level of tax as before	438	43.11	
			4	Don't know	101	9.94	
			Q75. After the coronavirus pandemic is over, some have argued there should be an increase in taxation to pay off national debts. For each of the following industries, please indicate... - The aviation industry				
92	Q75_10	numeric	1	Should pay more tax than before	292	28.74	
			2	Should pay less tax than before	224	22.05	
			3	Should pay the same level of tax as before	405	39.86	
			4	Don't know	95	9.35	
			Q75. After the coronavirus pandemic is over, some have argued there should be an increase in taxation to pay off national debts. For each of the following industries, please indicate... - The travel industry (not including aviation)				
93	Q75_11	numeric	1	Should pay more tax than before	230	22.64	
			2	Should pay less tax than before	267	26.28	
			3	Should pay the same level of tax as before	420	41.34	
			4	Don't know	99	9.74	
			Q75. After the coronavirus pandemic is over, some have argued there should be an increase in taxation to pay off national debts. For each of the following industries, please indicate... - Technology companies				
94	Q75_12	numeric	1	Should pay more tax than before	248	24.41	
			2	Should pay less tax than before	125	12.30	
			3	Should pay the same level of tax as before	466	45.87	
			4	Don't know	177	17.42	
			Q3. How strongly do you agree or disagree with the following statements? - New variants of coronavirus will significantly disrupt the effectiveness of vaccines				
95	Q3_86	numeric	1	Agree strongly	90	8.86	
			2	Agree slightly	253	24.90	
			3	Neither agree nor disagree	300	29.53	
			4	Disagree slightly	124	12.20	
			5	Disagree strongly	50	4.92	
			99	Don't know	199	19.59	
			Q3. How strongly do you agree or disagree with the following statements? -				
96	Q3_87	numeric	1	Agree strongly	304	29.92	
			2	Agree slightly	254	25.00	
			3	Neither agree nor disagree	191	18.80	
			4	Disagree slightly	92	9.06	

		'Vaccine passports' should be introduced, where access to travel, entertainment and other activities requires proof of vaccination	5 99	Disagree strongly Don't know	132 43	12.99 4.23	
97	Q3_88	numeric	Q3. How strongly do you agree or disagree with the following statements? - Now is a good time for small investors to be trading shares	1 2 3 4 5 99	Agree strongly Agree slightly Neither agree nor disagree Disagree slightly Disagree strongly Don't know	99 206 276 86 66 283	9.74 20.28 27.17 8.46 6.50 27.85
			Q3. How strongly do you agree or disagree with the following statements? - I have thought about becoming more active in the stock market through trading shares	1 2 3 4 5 99	Agree strongly Agree slightly Neither agree nor disagree Disagree slightly Disagree strongly Don't know	111 202 245 103 273 82	10.93 19.88 24.11 10.14 26.87 8.07
			Q3. How strongly do you agree or disagree with the following statements? - All travellers arriving into this country should have to quarantine in a hotel to make sure they do not have the coronavirus	1 2 3 4 5 99	Agree strongly Agree slightly Neither agree nor disagree Disagree slightly Disagree strongly Don't know	369 254 189 81 79 44	36.32 25.00 18.60 7.97 7.78 4.33
			Q3. How strongly do you agree or disagree with the following statements? - This will be the last wave of the coronavirus in my country	1 2 3 4 5 99	Agree strongly Agree slightly Neither agree nor disagree Disagree slightly Disagree strongly Don't know	55 100 205 224 254 178	5.41 9.84 20.18 22.05 25.00 17.52
			Q3. How strongly do you agree or disagree with the following statements? - We will not need another lockdown in my country	1 2 3 4 5 99	Agree strongly Agree slightly Neither agree nor disagree Disagree slightly Disagree strongly Don't know	134 201 259 181 147 94	13.19 19.78 25.49 17.81 14.47 9.25
			Q3. How strongly do you agree or disagree with the following statements? - I will be able to take a summer holiday abroad this year if I want to	1 2 3 4 5 99	Agree strongly Agree slightly Neither agree nor disagree Disagree slightly Disagree strongly Don't know	93 140 210 170 291 112	9.15 13.78 20.67 16.73 28.64 11.02
103	Q3_94	numeric	Q3. How strongly do you agree or disagree with the following statements? - We need to prepare	1 2 3 4	Agree strongly Agree slightly Neither agree nor disagree Disagree slightly	284 260 245 71	27.95 25.59 24.11 6.99

		better	5	Disagree strongly	86	8.46
		for averting climate	99	Don't know	70	6.89
		change than we				
		prepared for				
		the coronavirus				
		pandemic				
		Q3. How strongly do				
		you agree or disagree				
		with the	1	Agree strongly	101	9.94
		following statements? -	2	Agree slightly	198	19.49
104 Q3_95	numeric	The coronavirus	3	Neither agree nor disagree	364	35.83
		pandemic	4	Disagree slightly	111	10.93
		has made me take the	5	Disagree strongly	179	17.62
		risk of climate change	99	Don't know	63	6.20
		more				
		seriously				
		Q3. How strongly do				
		you agree or disagree	1	Agree strongly	77	7.58
		with the	2	Agree slightly	150	14.76
		following statements? - I	3	Neither agree nor disagree	295	29.04
105 Q3_96	numeric	have paid more to offset	4	Disagree slightly	138	13.58
		my carbon for a product	5	Disagree strongly	254	25.00
		or service, e.g. when	99	Don't know	102	10.04
		buying a flight				
		Q3. How strongly do				
		you agree or disagree	1	Agree strongly	61	6.00
		with the	2	Agree slightly	199	19.59
		following statements? -	3	Neither agree nor disagree	332	32.68
106 Q3_97	numeric	When a company says	4	Disagree slightly	219	21.56
		they	5	Disagree strongly	134	13.19
		are offsetting the carbon	99	Don't know	71	6.99
		from a product I believe				
		they will do it				
		Q3. How strongly do				
		you agree or disagree	1	Agree strongly	203	19.98
		with the	2	Agree slightly	279	27.46
		following statements? - I	3	Neither agree nor disagree	260	25.59
107 Q3_98	numeric	expect all businesses to	4	Disagree slightly	100	9.84
		have a target to get to	5	Disagree strongly	73	7.19
		Net Zero carbon	99	Don't know	101	9.94
		emissions				
		Q3. How strongly do				
		you agree or disagree	1	Agree strongly	219	21.56
		with the	2	Agree slightly	253	24.90
		following statements? -	3	Neither agree nor disagree	261	25.69
108 Q3_99	numeric	Businesses should be	4	Disagree slightly	109	10.73
		required by law to get to	5	Disagree strongly	87	8.56
		Net Zero carbon	99	Don't know	87	8.56
		emissions				
		Q3. How strongly do				
		you agree or disagree	1	Agree strongly	121	11.91
		with the	2	Agree slightly	266	26.18
		following statements? -	3	Neither agree nor disagree	230	22.64
109 Q3_100	numeric	Restrictions should be	4	Disagree slightly	170	16.73
		lifted more quickly for	5	Disagree strongly	163	16.04
		vaccinated people than	99	Don't know	66	6.50
		for				
		non-vaccinated people				

110 Q3_101	numeric	Q3. How strongly do you agree or disagree with the following statements? - It should be compulsory to have the vaccine	1	Agree strongly	199	19.59
			2	Agree slightly	243	23.92
			3	Neither agree nor disagree	206	20.28
			4	Disagree slightly	96	9.45
			5	Disagree strongly	241	23.72
			99	Don't know	31	3.05
111 Q3_102	numeric	Q3. How strongly do you agree or disagree with the following statements? - Government should act to make cities greener after the coronavirus pandemic is over	1	Agree strongly	284	27.95
			2	Agree slightly	322	31.69
			3	Neither agree nor disagree	247	24.31
			4	Disagree slightly	63	6.20
			5	Disagree strongly	44	4.33
			99	Don't know	56	5.51
112 Q3_103	numeric	Q3. How strongly do you agree or disagree with the following statements? - AstraZeneca is a company that contributes positively to	1	Agree strongly	133	13.09
			2	Agree slightly	287	28.25
			3	Neither agree nor disagree	285	28.05
			4	Disagree slightly	98	9.65
			5	Disagree strongly	63	6.20
			99	Don't know	150	14.76
113 Q3_104	numeric	Q3. How strongly do you agree or disagree with the following statements? - The Tokyo Olympics should go ahead this year	1	Agree strongly	110	10.83
			2	Agree slightly	119	11.71
			3	Neither agree nor disagree	209	20.57
			4	Disagree slightly	165	16.24
			5	Disagree strongly	300	29.53
			99	Don't know	113	11.12
114 Q3_105	numeric	Q3. How strongly do you agree or disagree with the following statements? - I know what the term 'Net Zero' means	1	Agree strongly	126	12.40
			2	Agree slightly	164	16.14
			3	Neither agree nor disagree	192	18.90
			4	Disagree slightly	98	9.65
			5	Disagree strongly	138	13.58
			99	Don't know	298	29.33
115 Q75_13	numeric	Q75. After the coronavirus pandemic is over, some have argued there should be an increase in taxation to pay off national debts. For each of the following industries, please indicate... - Large companies in general	1	Should pay more tax than before	350	34.45
			2	Should pay less tax than before	126	12.40
			3	Should pay the same level of tax as before	432	42.52
			4	Don't know	108	10.63
116 Q75_14	numeric	Q75. After the coronavirus pandemic is over, some have argued there should be an increase in taxation to pay off national debts. For each of the following industries, please indicate... -	1	Should pay more tax than before	489	48.13
			2	Should pay less tax than before	107	10.53
			3	Should pay the same level of tax as before	340	33.46
			4	Don't know	80	7.87

		Individuals with high incomes				
		Q77. For each of the following scenarios, please indicate how you think covid restrictions in your country should change if: - All people over 65 years old have been vaccinated				
117 Q77_1	numeric		1	Current restrictions should be kept in place		
			2	Restrictions should be scaled back somewhat but some should remain in place	424	41.73
			3	place	435	42.81
			4	Restrictions should be completely lifted	88	8.66
				Don't know	69	6.79
		Q77. For each of the following scenarios, please indicate how you think covid restrictions in your country should change if: - All people over 50 years old have been vaccinated				
118 Q77_2	numeric		1	Current restrictions should be kept in place		
			2	Restrictions should be scaled back somewhat but some should remain in place	380	37.40
			3	place	447	44.00
			4	Restrictions should be completely lifted	115	11.32
				Don't know	74	7.28
		Q77. For each of the following scenarios, please indicate how you think covid restrictions in your country should change if: - Most adults have been vaccinated				
119 Q77_3	numeric		1	Current restrictions should be kept in place		
			2	Restrictions should be scaled back somewhat but some should remain in place	246	24.21
			3	place	445	43.80
			4	Restrictions should be completely lifted	245	24.11
				Don't know	80	7.87
		Q77. For each of the following scenarios, please indicate how you think covid restrictions in your country should change if: - Deaths are very low but cases are still in the thousands				
120 Q77_4	numeric		1	Current restrictions should be kept in place		
			2	Restrictions should be scaled back somewhat but some should remain in place	488	48.03
			3	place	344	33.86
			4	Restrictions should be completely lifted	97	9.55
				Don't know	87	8.56
		Q77. For each of the following scenarios, please indicate how you think covid restrictions in your country should change if: - Deaths and cases are both very low				
121 Q77_5	numeric		1	Current restrictions should be kept in place		
			2	Restrictions should be scaled back somewhat but some should remain in place	241	23.72
			3	place	460	45.28
			4	Restrictions should be completely lifted	228	22.44
				Don't know	87	8.56
		Q77. For each of the following scenarios, please indicate how you think covid restrictions in your country should change if: - Most countries near to yours have had most adults vaccinated				
122 Q77_6	numeric		1	Current restrictions should be kept in place		
			2	Restrictions should be scaled back somewhat but some should remain in place	277	27.26
			3	place	430	42.32
			4	Restrictions should be completely lifted	197	19.39
				Don't know	112	11.02

123 Q77_7	numeric	Q77. For each of the following scenarios, please indicate how you think covid restrictions in your country should change if: - Most of the world have had most adults vaccinated	1	Current restrictions should be kept in place		
			2	Restrictions should be scaled back somewhat but some should remain in place	246	24.21
			3		402	39.57
			4	Restrictions should be completely lifted	270	26.57
				Don't know	98	9.65
124 Q77_8	numeric	Q77. For each of the following scenarios, please indicate how you think covid restrictions in your country should change if: - Deaths and cases are very low but there is still a risk of new variants	1	Current restrictions should be kept in place		
			2	Restrictions should be scaled back somewhat but some should remain in place	283	27.85
			3		456	44.88
			4	Restrictions should be completely lifted	184	18.11
				Don't know	93	9.15
125 Q78x2_1	numeric	Q78x2. For each of the following please say...Whether you would rather have this from your own country but where the quality cannot be guaranteed, or from another country with a guarantee of quality: - Healthcare workers	0	come from my country but quality not guaranteed	24	2.36
			1	1	24	2.36
			2	2	27	2.66
			3	3	35	3.44
			4	4	61	6.00
			5	5	180	17.72
			6	6	86	8.46
			7	7	154	15.16
			8	8	172	16.93
			9	9	95	9.35
126 Q78x2_2	numeric	Q78x2. For each of the following please say...Whether you would rather have this from your own country but where the quality cannot be guaranteed, or from another country with a guarantee of quality: - Workers generally	0	come from my country but quality not guaranteed	28	2.76
			1	1	20	1.97
			2	2	53	5.22
			3	3	69	6.79
			4	4	76	7.48
			5	5	223	21.95
			6	6	138	13.58
			7	7	132	12.99
			8	8	103	10.14
			9	9	63	6.20
127 Q78x2_3	numeric	Q78x2. For each of the following please say...Whether you would rather have this from your own country but where the quality cannot be guaranteed, or from another country with a guarantee of quality: - Vaccines	0	come from my country but quality not guaranteed	17	1.67
			1	1	8	0.79
			2	2	23	2.26
			3	3	35	3.44
			4	4	32	3.15
			5	5	157	15.45
			6	6	72	7.09
			7	7	106	10.43
			8	8	123	12.11
			9	9	114	11.22
			10	come from another country with a guarantee of quality	329	32.38

128	Q78x2_4	numeric	Q78x2. For each of the	0	come from my country but quality		
			following please	1	not guaranteed	10	0.98
			say...Whether you	2		14	1.38
			would rather have this	3		24	2.36
			from your	4		38	3.74
				4		36	3.54
			own country but where	5		175	17.22
			the quality cannot be	6		79	7.78
			guaranteed, or from	7		115	11.32
			another country with a	8		149	14.67
129	Q78x2_5	numeric	guarantee of quality: -	9		114	11.22
			Medicines generally	10	come from another country with a	262	25.79
					guarantee of quality		
			Q78x2. For each of the	0	come from my country but quality		
			following please	1	not guaranteed	13	1.28
			say...Whether you	2		22	2.17
			would rather have this	3		29	2.85
			from your	4		39	3.84
				4		37	3.64
			own country but where	5		172	16.93
130	Q78x2_6	numeric	the quality cannot be	6		79	7.78
			guaranteed, or from	7		133	13.09
			another country with a	8		140	13.78
			guarantee of quality: -	9		117	11.52
			PPE (personal protective	10	come from another country with a	235	23.13
			equipment)		guarantee of quality		
			Q78x2. For each of the	0	come from my country but quality		
			following please	1	not guaranteed	36	3.54
			say...Whether you	2		25	2.46
			would rather have this	3		51	5.02
131	Q78x2_7	numeric	from your	4		85	8.37
				4		81	7.97
			own country but where	5		243	23.92
			the quality cannot be	6		96	9.45
			guaranteed, or from	7		97	9.55
			another country with a	8		133	13.09
			guarantee of quality: -	9		52	5.12
			Basic food items	10	come from another country with a	117	11.52
					guarantee of quality		
			Q78x2. For each of the	0	come from my country but quality		
132	Q78x2_8	numeric	following please	1	not guaranteed	35	3.44
			say...Whether you	2		29	2.85
			would rather have this	3		47	4.63
			from your	4		72	7.09
				4		95	9.35
			own country but where	5		261	25.69
			the quality cannot be	6		87	8.56
			guaranteed, or from	7		104	10.24
			another country with a	8		87	8.56
			guarantee of quality: -	9		69	6.79
			Military technology	10	come from another country with a	130	12.80
					guarantee of quality		
			Q78x2. For each of the	0	come from my country but quality	42	4.13
			following please	1	not guaranteed	52	5.12
			say...Whether you	2		66	6.50
			would rather have this	3		60	5.91
			from your	4		96	9.45
			own country but where	5		231	22.74
			the quality cannot be	6		79	7.78

		guaranteed, or from	7	6	107	10.53
		another country with a	8	7	99	9.74
		guarantee of quality: -	9	8	62	6.10
		Energy	10	9	122	12.01
				come from another country with a		
				guarantee of quality		
		Q78x2. For each of the		come from my country but quality		
		following please	0	not guaranteed	36	3.54
		say...Whether you	1		29	2.85
		would rather have this	2		47	4.63
		from your	3		67	6.59
		own country but where	4		94	9.25
133	Q78x2_9	numeric	the quality cannot be	5	245	24.11
			guaranteed, or from	6	95	9.35
			another country with a	7	103	10.14
			guarantee of quality: -	8	105	10.33
		Telecommunications	9	9	75	7.38
		network	10	come from another country with a	120	11.81
		equipment		guarantee of quality		
		Q78x2. For each of the	0	come from my country but quality		
		following please	1	not guaranteed	23	2.26
		say...Whether you	2		16	1.57
		would rather have this	3		37	3.64
		from your	4		59	5.81
		own country but where	5		80	7.87
134	Q78x2_10	numeric	the quality cannot be	6	281	27.66
			guaranteed, or from	7	99	9.74
			another country with a	8	133	13.09
			guarantee of quality: -	9	91	8.96
		Fashion products	10	9	70	6.89
				come from another country with a	127	12.50
				guarantee of quality		
		Q78x1. For each of the	0	come only from my country	60	5.91
		following please	1		60	5.91
		say...Whether you think	2		65	6.40
		they should come only	3		76	7.48
		from	4		100	9.84
135	Q78x1_1	numeric	your own country, or	5	288	28.35
			from other countries	6	74	7.28
			around	7	108	10.63
			the world: - Healthcare	8	78	7.68
		workers	9	9	40	3.94
			10	come from other countries around	67	6.59
				the world		
		Q78x1. For each of the	0	come only from my country	56	5.51
		following please	1		52	5.12
		say...Whether you think	2		65	6.40
		they should come only	3		91	8.96
		from	4		100	9.84
136	Q78x1_2	numeric	your own country, or	5	315	31.00
			from other countries	6	100	9.84
			around	7	96	9.45
			the world: - Workers	8	66	6.50
		generally	9	9	33	3.25
			10	come from other countries around	42	4.13
				the world		
		Q78x1. For each of the	0	come only from my country	36	3.54
137	Q78x1_3	numeric	following please	1	24	2.36
			say...Whether you think	2	28	2.76

		they should come only	3	3	42	4.13
		from	4	4	66	6.50
		your own country, or	5	5	357	35.14
		from other countries	6	6	75	7.38
		around	7	7	127	12.50
		the world: - Vaccines	8	8	95	9.35
			9	9	71	6.99
			10	come from other countries around the world	95	9.35
			0	come only from my country	25	2.46
		Q78x1. For each of the	1	1	24	2.36
		following please	2	2	38	3.74
		say...Whether you think	3	3	52	5.12
		they should come only	4	4	84	8.27
		from	5	5	352	34.65
		your own country, or	6	6	83	8.17
		from other countries	7	7	126	12.40
		around	8	8	101	9.94
		the world: - Medicines	9	9	58	5.71
		generally	10	come from other countries around the world	73	7.19
			0	come only from my country	40	3.94
		Q78x1. For each of the	1	1	30	2.95
		following please	2	2	36	3.54
		say...Whether you think	3	3	55	5.41
		they should come only	4	4	91	8.96
		from	5	5	370	36.42
		your own country, or	6	6	82	8.07
		from other countries	7	7	105	10.33
		around	8	8	93	9.15
		the world: - PPE	9	9	54	5.31
		(personal protective	10	come from other countries around the world	60	5.91
		equipment)				
			0	come only from my country	89	8.76
		Q78x1. For each of the	1	1	68	6.69
		following please	2	2	91	8.96
		say...Whether you think	3	3	102	10.04
		they should come only	4	4	93	9.15
		from	5	5	273	26.87
		your own country, or	6	6	65	6.40
		from other countries	7	7	83	8.17
		around	8	8	73	7.19
		the world: - Basic food	9	9	30	2.95
		items	10	come from other countries around the world	49	4.82
			0	come only from my country	71	6.99
		Q78x1. For each of the	1	1	47	4.63
		following please	2	2	66	6.50
		say...Whether you think	3	3	99	9.74
		they should come only	4	4	95	9.35
		from	5	5	335	32.97
		your own country, or	6	6	82	8.07
		from other countries	7	7	89	8.76
		around	8	8	55	5.41
		the world: - Military	9	9	35	3.44
		technology	10	come from other countries around the world	42	4.13
			0	come only from my country	113	11.12
		Q78x1. For each of the	1	1	93	9.15
		following please				

		say...Whether you think	2	2	79	7.78	
		they should come only	3	3	93	9.15	
		from	4	4	98	9.65	
		your own country, or	5	5	286	28.15	
		from other countries	6	6	63	6.20	
		around	7	7	63	6.20	
		the world: - Energy	8	8	56	5.51	
			9	9	28	2.76	
			10	come from other countries around the world	44	4.33	
		Q78x1. For each of the	0	come only from my country	71	6.99	
		following please	1	1	48	4.72	
		say...Whether you think	2	2	66	6.50	
		they should come only	3	3	99	9.74	
		from	4	4	87	8.56	
143	Q78x1_9	numeric	your own country, or	5	5	340	33.46
			from other countries	6	6	78	7.68
			around	7	7	83	8.17
			the world: -	8	8	67	6.59
		Telecommunications	9	9	39	3.84	
		network equipment	10	come from other countries around the world	38	3.74	
		Q78x1. For each of the	0	come only from my country	38	3.74	
		following please	1	1	30	2.95	
		say...Whether you think	2	2	46	4.53	
		they should come only	3	3	71	6.99	
		from	4	4	95	9.35	
144	Q78x1_10	numeric	your own country, or	5	5	372	36.61
			from other countries	6	6	98	9.65
			around	7	7	94	9.25
			the world: - Fashion	8	8	80	7.87
		products	9	9	46	4.53	
			10	come from other countries around the world	46	4.53	
		Q79x1. What makes a company's climate change					
		commitment most					
145	Q79x1_1	numeric	believable? Choose the	0	Not selected	623	61.32
			two most	1	Selected	393	38.68
		believable. - They are monitored by an independent agency					
		Q79x1. What makes a company's climate change					
		commitment most					
146	Q79x1_2	numeric	believable? Choose the	0	Not selected	784	77.17
			two most	1	Selected	232	22.83
		believable. - They set out a clear plan of action in public					
		Q79x1. What makes a company's climate change					
147	Q79x1_3	numeric	change	0	Not selected	952	93.70
		commitment most	1	Selected	64	6.30	
		believable? Choose the					
		two most					

			believable. - The chief executive makes a public commitment				
			Q79x1. What makes a company's climate change				
148	Q79x1_4	numeric	commitment most believable? Choose the two most	0 1	Not selected Selected	738 278	72.64 27.36
			believable. - They set a clear target to hit				
			Q79x1. What makes a company's climate change				
149	Q79x1_5	numeric	commitment most believable? Choose the two most	0 1	Not selected Selected	892 124	87.80 12.20
			believable. - They have a realistic deadline to meet				
			Q79x1. What makes a company's climate change				
150	Q79x1_6	numeric	commitment most believable? Choose the two most	0 1	Not selected Selected	930 86	91.54 8.46
			believable. - They use carbon offsets in their plan				
			Q79x1. What makes a company's climate change				
151	Q79x1_7	numeric	commitment most believable? Choose the two most	0 1	Not selected Selected	901 115	88.68 11.32
			believable. - They plan to completely eliminate CO2 emissions				
			Q79x1. What makes a company's climate change				
152	Q79x1_8	numeric	commitment most believable? Choose the two most	0 1	Not selected Selected	879 137	86.52 13.48
			believable. - Their plan covers their suppliers as well as their core business				
			Q79x1. What makes a company's climate change				
153	Q79x1_9	numeric	commitment most believable? Choose the two most	0 1	Not selected Selected	962 54	94.69 5.31
			believable. - Their plan covers their employees' commutes and business travel as well as direct emissions				

154	Q79x1_10	numeric	Q79x1. What makes a company's climate change commitment most believable? Choose the two most believable. - They give clear examples of how they have made progress	0 1	Not selected Selected	858 158	84.45 15.55
155	Q79x1_11	numeric	Q79x1. What makes a company's climate change commitment most believable? Choose the two most believable. - They invest significant amount of money in achieving it	0 1	Not selected Selected	889 127	87.50 12.50
156	Q79x1_99	numeric	Q79x1. What makes a company's climate change commitment most believable? Choose the two most believable. - None of the above	0 1	Not selected Selected	884 132	87.01 12.99
157	Q79x2_1	numeric	Q79x2. And what makes a company's climate change commitment least believable? Choose the two least believable. - They are monitored by an independent agency	0 1	Not selected Selected	542 81	87.00 13.00
158	Q79x2_2	numeric	Q79x2. And what makes a company's climate change commitment least believable? Choose the two least believable. - They set out a clear plan of action in public	0 1	Not selected Selected	671 113	85.59 14.41
159	Q79x2_3	numeric	Q79x2. And what makes a company's climate change commitment least believable? Choose the two least believable. - The chief executive makes a public commitment	0 1	Not selected Selected	518 434	54.41 45.59
160	Q79x2_4	numeric	Q79x2. And what makes a company's climate change commitment least	0 1	Not selected Selected	628 110	85.09 14.91

			believable? Choose the two least believable. - They set a clear target to hit				
			Q79x2. And what makes a company's climate change commitment least believable? Choose the two least believable. - They have a realistic deadline to meet				
161	Q79x2_5	numeric	Q79x2. And what makes a company's climate change commitment least believable? Choose the two least believable. - They have a realistic deadline to meet	0 1	Not selected Selected	772 120	86.55 13.45
			Q79x2. And what makes a company's climate change commitment least believable? Choose the two least believable. - They use carbon offsets in their plan				
162	Q79x2_6	numeric	Q79x2. And what makes a company's climate change commitment least believable? Choose the two least believable. - They use carbon offsets in their plan	0 1	Not selected Selected	788 142	84.73 15.27
			Q79x2. And what makes a company's climate change commitment least believable? Choose the two least believable. - They plan to completely eliminate CO2 emissions				
163	Q79x2_7	numeric	Q79x2. And what makes a company's climate change commitment least believable? Choose the two least believable. - They plan to completely eliminate CO2 emissions	0 1	Not selected Selected	649 252	72.03 27.97
			Q79x2. And what makes a company's climate change commitment least believable? Choose the two least believable. - Their plan covers their suppliers as well as their core business				
164	Q79x2_8	numeric	Q79x2. And what makes a company's climate change commitment least believable? Choose the two least believable. - Their plan covers their suppliers as well as their core business	0 1	Not selected Selected	768 111	87.37 12.63
			Q79x2. And what makes a company's climate change commitment least believable? Choose the two least believable. - Their plan covers their employees' commutes and business travel as well as direct emissions				
165	Q79x2_9	numeric	Q79x2. And what makes a company's climate change commitment least believable? Choose the two least believable. - Their plan covers their employees' commutes and business travel as well as direct emissions	0 1	Not selected Selected	834 128	86.69 13.31
			Q79x2. And what makes a company's climate change commitment least believable? Choose the two least believable. - They give				
166	Q79x2_10	numeric	Q79x2. And what makes a company's climate change commitment least believable? Choose the two least believable. - They give	0 1	Not selected Selected	757 101	88.23 11.77

			clear examples of how they have made progress				
167	Q79x2_11	numeric	Q79x2. And what makes a company's climate change commitment least believable? Choose the two least believable. - They invest significant amount of money in achieving it	0 1	Not selected Selected	791 98	88.98 11.02
168	Q79x2_99	numeric	Q79x2. And what makes a company's climate change commitment least believable? Choose the two least believable. - None of the above	0 1	Not selected Selected	845 171	83.17 16.83
169	Q80_1_1	numeric	Q80_1. Please say how you normally react when a company that you know announces one of the following things. - Tackling climate change	1 2	I have heard of this before I have not heard of this before	836 180	82.28 17.72
170	Q80_1_2	numeric	Q80_1. Please say how you normally react when a company that you know announces one of the following things. - Tackling climate change	1 2	I know what this means I do not know what this means	555 461	54.63 45.37
171	Q80_1_3	numeric	Q80_1. Please say how you normally react when a company that you know announces one of the following things. - Tackling climate change	1 2	This makes me think they are serious about climate change This makes me think the company is only doing it to improve their image	312 704	30.71 69.29
172	Q80_2_1	numeric	Q80_2. Please say how you normally react when a company that you know announces one of the following things. - Net Zero pledges	1 2	I have heard of this before I have not heard of this before	525 491	51.67 48.33
173	Q80_2_2	numeric	Q80_2. Please say how you normally react when a company that you know announces one of the following things. - Net Zero pledges	1 2	I know what this means I do not know what this means	405 611	39.86 60.14
174	Q80_2_3	numeric	Q80_2. Please say how you normally react when a company that you know announces one of the following things. - Net Zero pledges	1 2	This makes me think they are serious about climate change	289 727	28.44 71.56

		company that you know announces one of the following things. - Net Zero pledges		This makes me think the company is only doing it to improve their image			
		Q80_3. Please say how you normally react when					
		a					
175	Q80_3_1	numeric	company that you know announces one of the following things. - Carbon neutrality	1	I have heard of this before	735	72.34
			Q80_3. Please say how you normally react when	2	I have not heard of this before	281	27.66
			a				
176	Q80_3_2	numeric	company that you know announces one of the following things. - Carbon neutrality	1	I know what this means	579	56.99
			Q80_3. Please say how you normally react when	2	I do not know what this means	437	43.01
			a				
177	Q80_3_3	numeric	company that you know announces one of the following things. - Carbon neutrality	1	This makes me think they are serious about climate change	380	37.40
			Q80_3. Please say how you normally react when	2	This makes me think the company is only doing it to improve their image	636	62.60
			a				
178	Q80_4_1	numeric	company that you know announces one of the following things. - Carbon offsetting	1	I have heard of this before	834	82.09
			Q80_4. Please say how you normally react when	2	I have not heard of this before	182	17.91
			a				
179	Q80_4_2	numeric	company that you know announces one of the following things. - Carbon offsetting	1	I know what this means	679	66.83
			Q80_4. Please say how you normally react when	2	I do not know what this means	337	33.17
			a				
180	Q80_4_3	numeric	company that you know announces one of the following things. - Carbon offsetting	1	This makes me think they are serious about climate change	378	37.20
			Q80_5. Please say how you normally react when	2	This makes me think the company is only doing it to improve their image	638	62.80
			a				
181	Q80_5_1	numeric	company that you know announces one of the following things. - Greenhouse gas reduction	1	I have heard of this before	880	86.61
			Q80_5. Please say how you normally react when	2	I have not heard of this before	136	13.39
			a				
182	Q80_5_2	numeric	company that you know	1	I know what this means	768	75.59
			Q80_5. Please say how you normally react when	2	I do not know what this means	248	24.41
			a				
			company that you know				

			announces one of the following things. - Greenhouse gas reduction				
			Q80_5. Please say how you normally react when a				
183	Q80_5_3	numeric	company that you know announces one of the following things. - Greenhouse gas reduction	1	This makes me think they are serious about climate change	482	47.44
				2	This makes me think the company is only doing it to improve their image	534	52.56
			Q80_6. Please say how you normally react when a				
184	Q80_6_1	numeric	company that you know announces one of the following things. - Reducing CO2	1	I have heard of this before	800	78.74
				2	I have not heard of this before	216	21.26
			Q80_6. Please say how you normally react when a				
185	Q80_6_2	numeric	company that you know announces one of the following things. - Reducing CO2	1	I know what this means	693	68.21
				2	I do not know what this means	323	31.79
			Q80_6. Please say how you normally react when a				
186	Q80_6_3	numeric	company that you know announces one of the following things. - Reducing CO2	1	This makes me think they are serious about climate change	419	41.24
				2	This makes me think the company is only doing it to improve their image	597	58.76
			Q80_7. Please say how you normally react when a				
187	Q80_7_1	numeric	company that you know announces one of the following things. - Reducing pollution	1	I have heard of this before	823	81.00
				2	I have not heard of this before	193	19.00
			Q80_7. Please say how you normally react when a				
188	Q80_7_2	numeric	company that you know announces one of the following things. - Reducing pollution	1	I know what this means	725	71.36
				2	I do not know what this means	291	28.64
			Q80_7. Please say how you normally react when a				
189	Q80_7_3	numeric	company that you know announces one of the following things. - Reducing pollution	1	This makes me think they are serious about climate change	431	42.42
				2	This makes me think the company is only doing it to improve their image	585	57.58
			Q80_8. Please say how you normally react when a				
190	Q80_8_1	numeric	company that you know	1	I have heard of this before	832	81.89
				2	I have not heard of this before	184	18.11

			announces one of the following things. - Clean air commitments				
			Q80_8. Please say how you normally react when a				
191	Q80_8_2	numeric	company that you know announces one of the following things. - Clean air commitments	1 2	I know what this means I do not know what this means	723 293	71.16 28.84
			Q80_8. Please say how you normally react when a				
192	Q80_8_3	numeric	company that you know announces one of the following things. - Clean air commitments	1 2	This makes me think they are serious about climate change This makes me think the company is only doing it to improve their image	349 667	34.35 65.65
			Q81x1. A business is 'Net Zero' if the amount of carbon emissions it produces is the same as				
193	Q81x1_1	numeric	or less than the amount of carbon it is removing from the atmosphere. What are the two... - To deal with the climate emergency	0 1	Not selected Selected	803 213	79.04 20.96
			Q81x1. A business is 'Net Zero' if the amount of carbon emissions it produces is the same as				
194	Q81x1_2	numeric	or less than the amount of carbon it is removing from the atmosphere. What are the two... - To tackle climate change	0 1	Not selected Selected	810 206	79.72 20.28
			Q81x1. A business is 'Net Zero' if the amount of carbon emissions it produces is the same as				
195	Q81x1_3	numeric	or less than the amount of carbon it is removing from the atmosphere. What are the two... - To get clean air	0 1	Not selected Selected	834 182	82.09 17.91
			Q81x1. A business is 'Net Zero' if the amount of carbon emissions it				
196	Q81x1_4	numeric	of carbon emissions it	0 1	Not selected Selected	936 80	92.13 7.87

		produces is the same as or less than the amount of carbon it is removing from the atmosphere. What are the two... - To make cities cleaner					
		Q81x1. A business is 'Net Zero' if the amount of carbon emissions it produces is the same as or less than the amount of carbon it is removing from the atmosphere. What are the two... - To reimagine energy					
197	Q81x1_5	numeric	0 1	Not selected Selected	952 64	93.70 6.30	
		Q81x1. A business is 'Net Zero' if the amount of carbon emissions it produces is the same as or less than the amount of carbon it is removing from the atmosphere. What are the two... - To improve people's lives					
198	Q81x1_6	numeric	0 1	Not selected Selected	923 93	90.85 9.15	
		Q81x1. A business is 'Net Zero' if the amount of carbon emissions it produces is the same as or less than the amount of carbon it is removing from the atmosphere. What are the two... - To clean up the planet					
199	Q81x1_7	numeric	0 1	Not selected Selected	918 98	90.35 9.65	
		Q81x1. A business is 'Net Zero' if the amount of carbon emissions it produces is the same as or less than the amount of carbon it is removing from the atmosphere. What are the two... - To keep					
200	Q81x1_8	numeric	0 1	Not selected Selected	783 233	77.07 22.93	

			global warming below 2 degrees C				
			Q81x1. A business is 'Net Zero' if the amount of carbon emissions it produces is the same as or less than the amount of carbon it is removing from the atmosphere. What are the two... - To save the planet				
201	Q81x1_9	numeric	Q81x1. A business is 'Net Zero' if the amount of carbon emissions it produces is the same as or less than the amount of carbon it is removing from the atmosphere. What are the two... - To save the planet	0 1	Not selected Selected	700 316	68.90 31.10
			Q81x1. A business is 'Net Zero' if the amount of carbon emissions it produces is the same as or less than the amount of carbon it is removing from the atmosphere. What are the two... - To save animal species				
202	Q81x1_10	numeric	Q81x1. A business is 'Net Zero' if the amount of carbon emissions it produces is the same as or less than the amount of carbon it is removing from the atmosphere. What are the two... - To save animal species	0 1	Not selected Selected	896 120	88.19 11.81
			Q81x1. A business is 'Net Zero' if the amount of carbon emissions it produces is the same as or less than the amount of carbon it is removing from the atmosphere. What are the two... - For future generations				
203	Q81x1_11	numeric	Q81x1. A business is 'Net Zero' if the amount of carbon emissions it produces is the same as or less than the amount of carbon it is removing from the atmosphere. What are the two... - For future generations	0 1	Not selected Selected	767 249	75.49 24.51
			Q81x1. A business is 'Net Zero' if the amount of carbon emissions it produces is the same as or less than the amount of carbon it is removing from the atmosphere. What are the two... - We should not aim for Net Zero carbon...				
204	Q81x1_99	numeric	Q81x1. A business is 'Net Zero' if the amount of carbon emissions it produces is the same as or less than the amount of carbon it is removing from the atmosphere. What are the two... - We should not aim for Net Zero carbon...	0 1	Not selected Selected	927 89	91.24 8.76
			Q81x2. And what are the two least important reasons to aim for Net Zero carbon emissions? - To				
205	Q81x2_1	numeric	Q81x2. And what are the two least important reasons to aim for Net Zero carbon emissions? - To	0 1	Not selected Selected	690 113	85.93 14.07

		deal with the climate emergency					
206	Q81x2_2	numeric	Q81x2. And what are the two least important reasons to aim for Net Zero carbon emissions?	0	Not selected	699	86.30
			- To tackle climate change	1	Selected	111	13.70
207	Q81x2_3	numeric	Q81x2. And what are the two least important reasons to aim for Net Zero carbon emissions?	0	Not selected	724	86.81
			- To get clean air	1	Selected	110	13.19
208	Q81x2_4	numeric	Q81x2. And what are the two least important reasons to aim for Net Zero carbon emissions?	0	Not selected	624	66.67
			- To make cities cleaner	1	Selected	312	33.33
209	Q81x2_5	numeric	Q81x2. And what are the two least important reasons to aim for Net Zero carbon emissions?	0	Not selected	664	69.75
			- To reimagine energy	1	Selected	288	30.25
210	Q81x2_6	numeric	Q81x2. And what are the two least important reasons to aim for Net Zero carbon emissions?	0	Not selected	737	79.85
			- To improve people's lives	1	Selected	186	20.15
211	Q81x2_7	numeric	Q81x2. And what are the two least important reasons to aim for Net Zero carbon emissions?	0	Not selected	705	76.80
			- To clean up the planet	1	Selected	213	23.20
212	Q81x2_8	numeric	Q81x2. And what are the two least important reasons to aim for Net Zero carbon emissions?	0	Not selected	652	83.27
			- To keep global warming below 2 degrees C	1	Selected	131	16.73
213	Q81x2_9	numeric	Q81x2. And what are the two least important reasons to aim for Net Zero carbon emissions?	0	Not selected	592	84.57
			- To save the planet	1	Selected	108	15.43
214	Q81x2_10	numeric	Q81x2. And what are the two least important reasons to aim for Net Zero carbon emissions?	0	Not selected	801	89.40
			- To save animal species	1	Selected	95	10.60

215	Q81x2_11	numeric	Q81x2. And what are the two least important reasons to aim for Net Zero carbon emissions? -	0 1	Not selected Selected	662 105	86.31 13.69
216	Q81x2_99	numeric	For future generations Q81x2. And what are the two least important reasons to aim for Net Zero carbon emissions? - We should not aim for Net Zero carbon emissions	0 1	Not selected Selected	886 130	87.20 12.80
217	Q82_1	numeric	Q82. Who do you think should have the most responsibility for addressing climate change? Rank them in order of priority. - Individuals	0 1	Not selected Selected	167 849	16.44 83.56
218	Q82_2	numeric	Q82. Who do you think should have the most responsibility for addressing climate change? Rank them in order of priority. - Businesses that emit large amounts of CO2	0 1	Not selected Selected	167 849	16.44 83.56
219	Q82_3	numeric	Q82. Who do you think should have the most responsibility for addressing climate change? Rank them in order of priority. - Countries that emit large amounts of CO2	0 1	Not selected Selected	167 849	16.44 83.56
220	Q82_4	numeric	Q82. Who do you think should have the most responsibility for addressing climate change? Rank them in order of priority. - Businesses generally	0 1	Not selected Selected	167 849	16.44 83.56
221	Q82_5	numeric	Q82. Who do you think should have the most responsibility for addressing climate change? Rank them in order of priority. - International businesses	0 1	Not selected Selected	167 849	16.44 83.56
222	Q82_6	numeric	Q82. Who do you think should have the most responsibility for addressing climate change? Rank them in order of priority.	0 1	Not selected Selected	167 849	16.44 83.56

			- Local/regional governments				
			Q82. Who do you think should have the most responsibility for addressing climate change? Rank them in order of priority.				
223 Q82_7	numeric		- National governments	0	Not selected	167	16.44
				1	Selected	849	83.56
			Q82. Who do you think should have the most responsibility for addressing climate change? Rank them in order of priority.				
224 Q82_8	numeric		- International organisations	0	Not selected	167	16.44
				1	Selected	849	83.56
			Q82. Who do you think should have the most responsibility for addressing climate change? Rank them in order of priority.				
225 Q82_99	numeric		- Don't know	0	Not selected	849	83.56
				1	Selected	167	16.44
			Q83. Do you feel the speed of the rollout of coronavirus vaccines in your country is...	1	Too fast	60	5.91
226 Q83	numeric			2	About right	208	20.47
				3	Too slow	658	64.76
				4	Don't know	90	8.86
			Q84A. How do you feel the following have handled the rollout of coronavirus vaccines so far: - The European Union	1	Very well	64	6.30
227 Q84A_1	numeric			2	Quite well	222	21.85
				3	Neither well nor badly	314	30.91
				4	Quite badly	157	15.45
				5	Very badly	90	8.86
				6	Don't know	169	16.63
			Q84A. How do you feel the following have handled the rollout of coronavirus vaccines so far: - The UK	1	Very well	115	11.32
228 Q84A_2	numeric			2	Quite well	320	31.50
				3	Neither well nor badly	237	23.33
				4	Quite badly	110	10.83
				5	Very badly	46	4.53
				6	Don't know	188	18.50
			Q84A. How do you feel the following have handled the rollout of coronavirus vaccines so far: - France	1	Very well	49	4.82
229 Q84A_3	numeric			2	Quite well	158	15.55
				3	Neither well nor badly	329	32.38
				4	Quite badly	110	10.83
				5	Very badly	43	4.23
				6	Don't know	327	32.19
			Q84A. How do you feel the following have handled the rollout of coronavirus vaccines so far: - Germany	1	Very well	52	5.12
230 Q84A_4	numeric			2	Quite well	202	19.88
				3	Neither well nor badly	333	32.78
				4	Quite badly	86	8.46
				5	Very badly	36	3.54
				6	Don't know	307	30.22
			Q84A. How do you feel the following have handled the rollout of coronavirus vaccines so far: - Sweden	1	Very well	47	4.63
231 Q84A_5	numeric			2	Quite well	186	18.31
				3	Neither well nor badly	253	24.90
				4	Quite badly	287	28.25
				5	Very badly	180	17.72
				6	Don't know	63	6.20

232 Q84A_6	numeric	Q84A. How do you feel	1	Very well	55	5.41
		the following have	2	Quite well	158	15.55
		handled	3	Neither well nor badly	254	25.00
		the rollout of coronavirus	4	Quite badly	180	17.72
		vaccines so far: - The	5	Very badly	131	12.89
		U.S.	6	Don't know	238	23.43
233 Q84A_7	numeric	Q84A. How do you feel	1	Very well	75	7.38
		the following have	2	Quite well	167	16.44
		handled	3	Neither well nor badly	254	25.00
		the rollout of coronavirus	4	Quite badly	72	7.09
		vaccines so far: -	5	Very badly	47	4.63
		Japan	6	Don't know	401	39.47
234 Q84A_8	numeric	Q84A. How do you feel	1	Very well	261	25.69
		the following have	2	Quite well	209	20.57
		handled	3	Neither well nor badly	179	17.62
		the rollout of coronavirus	4	Quite badly	50	4.92
		vaccines so far: -	5	Very badly	40	3.94
		Israel	6	Don't know	277	27.26
235 Q84A_9	numeric	Q84A. How do you feel	1	Very well	39	3.84
		the following have	2	Quite well	134	13.19
		handled	3	Neither well nor badly	288	28.35
		the rollout of coronavirus	4	Quite badly	77	7.58
		vaccines so far: -	5	Very badly	34	3.35
		Austria	6	Don't know	444	43.70
236 Q84A_10	numeric	Q84A. How do you feel	1	Very well	68	6.69
		the following have	2	Quite well	164	16.14
		handled	3	Neither well nor badly	235	23.13
		the rollout of coronavirus	4	Quite badly	85	8.37
		vaccines so far: -	5	Very badly	72	7.09
		China	6	Don't know	392	38.58
237 Q84A_11	numeric	Q84A. How do you feel	1	Very well	65	6.40
		the following have	2	Quite well	154	15.16
		handled	3	Neither well nor badly	237	23.33
		the rollout of coronavirus	4	Quite badly	109	10.73
		vaccines so far: -	5	Very badly	74	7.28
		Russia	6	Don't know	377	37.11
238 Q84A_12	numeric	Q84A. How do you feel	1	Very well	51	5.02
		the following have	2	Quite well	118	11.61
		handled	3	Neither well nor badly	284	27.95
		the rollout of coronavirus	4	Quite badly	119	11.71
		vaccines so far: -	5	Very badly	49	4.82
		Italy	6	Don't know	395	38.88
239 Q84A_13	numeric	Q84A. How do you feel	1	Very well	83	8.17
		the following have	2	Quite well	241	23.72
		handled	3	Neither well nor badly	292	28.74
		the rollout of coronavirus	4	Quite badly	57	5.61
		vaccines so far: -	5	Very badly	31	3.05
		Norway	6	Don't know	312	30.71
240 Q84A_14	numeric	Q84A. How do you feel	1	Very well	98	9.65
		the following have	2	Quite well	254	25.00
		handled	3	Neither well nor badly	275	27.07
		the rollout of coronavirus	4	Quite badly	66	6.50
		vaccines so far: -	5	Very badly	34	3.35
		Denmark	6	Don't know	289	28.44
241 Q84A_15	numeric	Q84A. How do you feel	1	Very well	58	5.71
		the following have	2	Quite well	110	10.83
		handled	3	Neither well nor badly	231	22.74
			4	Quite badly	64	6.30

		the rollout of coronavirus	5	Very badly	39	3.84
		vaccines so far: - UAE	6	Don't know	514	50.59
242 Q84A_16	numeric	Q84A. How do you feel	1	Very well	56	5.51
		the following have	2	Quite well	148	14.57
		handled	3	Neither well nor badly	252	24.80
		the rollout of coronavirus	4	Quite badly	55	5.41
		vaccines so far: -	5	Very badly	29	2.85
		Canada	6	Don't know	476	46.85
243 Q84B_1	numeric	Q84B. How do you feel	1	Very well	86	8.46
		the following have	2	Quite well	250	24.61
		handled	3	Neither well nor badly	267	26.28
		the rollout of coronavirus	4	Quite badly	134	13.19
		vaccines so far: -	5	Very badly	55	5.41
		Pfizer	6	Don't know	224	22.05
244 Q84B_2	numeric	Q84B. How do you feel	1	Very well	56	5.51
		the following have	2	Quite well	198	19.49
		handled	3	Neither well nor badly	245	24.11
		the rollout of coronavirus	4	Quite badly	203	19.98
		vaccines so far: -	5	Very badly	114	11.22
		AstraZeneca	6	Don't know	200	19.69
245 Q84B_3	numeric	Q84B. How do you feel	1	Very well	65	6.40
		the following have	2	Quite well	220	21.65
		handled	3	Neither well nor badly	281	27.66
		the rollout of coronavirus	4	Quite badly	131	12.89
		vaccines so far: -	5	Very badly	51	5.02
		Moderna	6	Don't know	268	26.38
246 Q84B_4	numeric	Q84B. How do you feel	1	Very well	42	4.13
		the following have	2	Quite well	112	11.02
		handled	3	Neither well nor badly	217	21.36
		the rollout of coronavirus	4	Quite badly	71	6.99
		vaccines so far: -	5	Very badly	45	4.43
		Novavax	6	Don't know	529	52.07
247 Q85_1	numeric	Q85. Would you or		I definitely would delay my own		
		would you not delay		coronavirus vaccine		
		your own	1	I probably would delay my own	249	24.51
		coronavirus vaccine to	2	coronavirus vaccine	227	22.34
		give it to someone older	3	I probably would not delay my own	226	22.24
		or	4	coronavirus vaccine	156	15.35
248 Q85_2	numeric	more vulnerable than	5	I definitely would not delay my own	158	15.55
		you in... - Africa		coronavirus vaccine		
				Don't know		
		Q85. Would you or		I definitely would delay my own		
		would you not delay		coronavirus vaccine		
		your own	1	I probably would delay my own	190	18.70
249 Q85_3	numeric	coronavirus vaccine to	2	coronavirus vaccine	211	20.77
		give it to someone older	3	I probably would not delay my own	299	29.43
		or	4	coronavirus vaccine	169	16.63
		more vulnerable than	5	I definitely would not delay my own	147	14.47
		you in... - Europe		coronavirus vaccine		
				Don't know		
249 Q85_3	numeric	Q85. Would you or		I definitely would delay my own		
		would you not delay		coronavirus vaccine		
		your own	1	I probably would delay my own	172	16.93
		coronavirus vaccine to	2	coronavirus vaccine	140	13.78
		give it to someone older	3	coronavirus vaccine	243	23.92
		or	4	I probably would not delay my own	302	29.72
249 Q85_3	numeric	more vulnerable than	5	coronavirus vaccine	159	15.65
		you in... - China		I definitely would not delay my own		

				coronavirus vaccine		
				Don't know		
				I definitely would delay my own		
				coronavirus vaccine		
250 Q85_4	numeric	Q85. Would you or would you not delay your own	1	I probably would delay my own	168	16.54
		coronavirus vaccine to	2	coronavirus vaccine	154	15.16
		give it to someone older	3	I probably would not delay my own	253	24.90
		or	4	coronavirus vaccine	296	29.13
		more vulnerable than	5	I definitely would not delay my own	145	14.27
		you in... - America		coronavirus vaccine		
				Don't know		
				I definitely would delay my own		
				coronavirus vaccine		
251 Q85_5	numeric	Q85. Would you or would you not delay your own	1	I probably would delay my own	192	18.90
		coronavirus vaccine to	2	coronavirus vaccine	187	18.41
		give it to someone older	3	I probably would not delay my own	284	27.95
		or	4	coronavirus vaccine	217	21.36
		more vulnerable than	5	I definitely would not delay my own	136	13.39
		you in... - The UK		coronavirus vaccine		
				Don't know		
				I definitely would delay my own		
				coronavirus vaccine		
252 Q85_6	numeric	Q85. Would you or would you not delay your own	1	I probably would delay my own	211	20.77
		coronavirus vaccine to	2	coronavirus vaccine	226	22.24
		give it to someone older	3	I probably would not delay my own	282	27.76
		or	4	coronavirus vaccine	162	15.94
		more vulnerable than	5	I definitely would not delay my own	135	13.29
		you in... - A neighbouring country		coronavirus vaccine		
				Don't know		
				I definitely would delay my own		
				coronavirus vaccine		
253 Q85_7	numeric	Q85. Would you or would you not delay your own	1	I probably would delay my own	297	29.23
		coronavirus vaccine to	2	coronavirus vaccine	273	26.87
		give it to someone older	3	I probably would not delay my own	196	19.29
		or	4	coronavirus vaccine	125	12.30
		more vulnerable than	5	I definitely would not delay my own	125	12.30
		you in... - A country worst hit by coronavirus		coronavirus vaccine		
				Don't know		
				I definitely would delay my own		
				coronavirus vaccine		
254 Q85_8	numeric	Q85. Would you or would you not delay your own	1	I probably would delay my own	163	16.04
		coronavirus vaccine to	2	coronavirus vaccine	154	15.16
		give it to someone older	3	I probably would not delay my own	272	26.77
		or	4	coronavirus vaccine	297	29.23
		more vulnerable than	5	I definitely would not delay my own	130	12.80
		you in... - A country not badly hit by coronavirus		coronavirus vaccine		
				Don't know		
				I definitely would delay my own		
				coronavirus vaccine		
255 Q85_9	numeric	Q85. Would you or would you not delay your own	1	I probably would delay my own	276	27.17
		coronavirus vaccine to	2	coronavirus vaccine	264	25.98
		give it to someone older	3	I probably would not delay my own	226	22.24
		or	4	coronavirus vaccine	123	12.11
		more vulnerable than	5	I definitely would not delay my own	127	12.50
		you in... - A country with a poor population		coronavirus vaccine		
				Don't know		

256 Q85_10	numeric	Q85. Would you or would you not delay your own coronavirus vaccine to give it to someone older or more vulnerable than you in... - A country with a rich population	1	I definitely would delay my own coronavirus vaccine		
			2	I probably would delay my own coronavirus vaccine	154	15.16
			3	I probably would not delay my own coronavirus vaccine	138	13.58
			4	I definitely would not delay my own coronavirus vaccine	254	25.00
			5	Don't know	337	33.17
257 Q85_11	numeric	Q85. Would you or would you not delay your own coronavirus vaccine to give it to someone older or more vulnerable than you in... - A country with ethnic groups that are more susceptible to the virus	1	I definitely would delay my own coronavirus vaccine	133	13.09
			2	I probably would delay my own coronavirus vaccine		
			3	I probably would not delay my own coronavirus vaccine	250	24.61
			4	I definitely would not delay my own coronavirus vaccine	270	26.57
			5	Don't know	238	23.43
258 Q86A_1	numeric	Q86A. In relation to your work, would you say the following have got better or worse for you over the last nine months? - Concentration while working	1	Much better	123	12.11
			2	A little better	135	13.29
			3	Neither better nor worse	48	9.47
			4	A little worse	65	12.82
			5	Much worse	259	51.08
259 Q86A_2	numeric	Q86A. In relation to your work, would you say the following have got better or worse for you over the last nine months? - Anxiety	6	Don't know	78	15.38
			1	Much better	39	7.69
			2	A little better	18	3.55
			3	Neither better nor worse		
			4	A little worse		
260 Q86A_3	numeric	Q86A. In relation to your work, would you say the following have got better or worse for you over the last nine months? - Happiness with work	5	Much worse	48	9.47
			6	Don't know	67	13.21
			1	Much better	73	14.40
			2	A little better	233	45.96
			3	Neither better nor worse	82	16.17
261 Q86A_4	numeric	Q86A. In relation to your work, would you say the following have got better or worse for you over the last nine months? - Levels of stress at work	4	A little worse	35	6.90
			5	Much worse	17	3.35
			6	Don't know		
			1	Much better	49	9.66
			2	A little better	70	13.81
262 Q86A_5	numeric	Q86A. In relation to your work, would you say the following have got better or worse for you over the last nine months? - Your job performance	3	Neither better nor worse	220	43.39
			4	A little worse	106	20.91
			5	Much worse	45	8.88
			6	Don't know	17	3.35
			1	Much better	55	10.85

263	Q86B_1	numeric	Q86B. You said 'worse' to at least one of the options shown. Which of the following statements applies to you? - I have raised concerns with my employer	0 1	Not selected Selected	165 99	62.50 37.50
264	Q86B_2	numeric	Q86B. You said 'worse' to at least one of the options shown. Which of the following statements applies to you? - I have not raised concerns with my employer because I am worried about their response	0 1	Not selected Selected	211 53	79.92 20.08
265	Q86B_3	numeric	Q86B. You said 'worse' to at least one of the options shown. Which of the following statements applies to you? - My employer has provided assistance and advice	0 1	Not selected Selected	204 60	77.27 22.73
266	Q86B_4	numeric	Q86B. You said 'worse' to at least one of the options shown. Which of the following statements applies to you? - I have raised my concerns with other employees	0 1	Not selected Selected	163 101	61.74 38.26
267	Q86B_5	numeric	Q86B. You said 'worse' to at least one of the options shown. Which of the following statements applies to you? - I have spoken to a doctor/healthcare professional	0 1	Not selected Selected	210 54	79.55 20.45
268	Q86B_6	numeric	Q86B. You said 'worse' to at least one of the options shown. Which of the following statements applies to you? - None of the above	0 1	Not selected Selected	218 46	82.58 17.42
269	Q87_1	numeric	Q87. How well or badly do you feel the following have worked during the coronavirus crisis? - The test and trace service	1 2 3 4 5 6	Very well Quite well Neither well nor badly Quite badly Very badly Don't know	45 183 225 269 190 104	4.43 18.01 22.15 26.48 18.70 10.24
270	Q87_3	numeric	Q87. How well or badly do you feel the following have worked during the coronavirus crisis? - The vaccine rollout	1 2 3 4 5 6	Very well Quite well Neither well nor badly Quite badly Very badly Don't know	41 176 249 312 176 62	4.04 17.32 24.51 30.71 17.32 6.10
271	Q87_4	numeric	Q87. How well or badly do you feel the following	1 2	Very well Quite well	221 356	21.75 35.04

		have worked during the coronavirus crisis? - The health system for Covid patients	3 4 5 6	Neither well nor badly Quite badly Very badly Don't know	194 114 67 64	19.09 11.22 6.59 6.30
272 Q87_5	numeric	Q87. How well or badly do you feel the following have worked during the coronavirus crisis? - The health system for non-Covid patients	1 2 3 4 5 6	Very well Quite well Neither well nor badly Quite badly Very badly Don't know	90 226 251 206 130 113	8.86 22.24 24.70 20.28 12.80 11.12
273 Q93_1	numeric	Q93. Over the last nine months, have the following become more or less important to your personal identity than before? - The village/town/city I live in	1 2 3 4 5 6	Much more important Slightly more important Neither more nor less important Slightly less important Much less important Don't know	103 195 583 48 27 60	10.14 19.19 57.38 4.72 2.66 5.91
274 Q93_2	numeric	Q93. Over the last nine months, have the following become more or less important to your personal identity than before? - The region within my country I live in	1 2 3 4 5 6	Much more important Slightly more important Neither more nor less important Slightly less important Much less important Don't know	90 207 575 61 22 61	8.86 20.37 56.59 6.00 2.17 6.00
275 Q93_3	numeric	Q93. Over the last nine months, have the following become more or less important to your personal identity than before? - The country I live in	1 2 3 4 5 6	Much more important Slightly more important Neither more nor less important Slightly less important Much less important Don't know	145 233 497 48 33 60	14.27 22.93 48.92 4.72 3.25 5.91
276 Q93_4	numeric	Q93. Over the last nine months, have the following become more or less important to your personal identity than before? - The part of the world I live in	1 2 3 4 5 6	Much more important Slightly more important Neither more nor less important Slightly less important Much less important Don't know	116 194 553 55 28 70	11.42 19.09 54.43 5.41 2.76 6.89
277 Q94_1	numeric	Q94 What is your view of AstraZeneca's capabilities to do the following: - AstraZeneca does not ordinarily make vaccines. - research and develop medicines other than vaccines	1 2 3 4 5 6	Much better than most pharmaceutical companies Slightly better than most pharmaceutical companies On par with most pharmaceutical companies Slightly worse than most pharmaceutical companies Much worse than most pharmaceutical companies Don't know / no opinion	79 176 393 67 20 281	7.78 17.32 38.68 6.59 1.97 27.66
278 Q94_2	numeric	Q94 What is your view of AstraZeneca's	1 2	Much better than most pharmaceutical companies	61 143	6.00 14.07

		capabilities to do the	3	Slightly better than most	384	37.80
		following: - AstraZeneca	4	pharmaceutical companies	106	10.43
		does not ordinarily	5	On par with most pharmaceutical	29	2.85
		make vaccines. -	6	companies	293	28.84
		produce and		Slightly worse than most		
		distribute medicines		pharmaceutical companies		
		other than vaccines		Much worse than most		
				pharmaceutical companies		
				Don't know / no opinion		
		Q95. How has your				
		view of AstraZeneca's	1	Improved a lot	85	8.37
		capabilities to do the	2	Improved somewhat	175	17.22
		following changed since	3	No change	428	42.13
279 Q95_1	numeric	they began developing a	4	Worsened somewhat	78	7.68
		Covid-19 vaccine? -	5	Worsened a lot	26	2.56
		research and develop	6	Don't know	224	22.05
		medicines other than				
		vaccines				
		Q95. How has your				
		view of AstraZeneca's	1	Improved a lot	65	6.40
		capabilities to do the	2	Improved somewhat	143	14.07
		following changed since	3	No change	431	42.42
280 Q95_2	numeric	they began developing a	4	Worsened somewhat	89	8.76
		Covid-19 vaccine? -	5	Worsened a lot	35	3.44
		produce and distribute	6	Don't know	253	24.90
		medicines other than				
		vaccines				
		Rimweight: S1. Are				
		you...? DAGE.Age				
281 RIMWEIGHT	numeric	breaks S3DE.	range: 0.9-1.2			
		What region do you live				
		in? - DE				