AN ANALYSIS OF THE MODERATING EFFECTS OF RESISTANCE TO PERSUASION ON ADHERENCE TO COVID-19 PREVENTION MEASURES

by

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A THESIS

Submitted in partial fulfillment of the requirements
for the degree of Master of Arts
in the Department of Advertising and Public Relations
in the Graduate School of
The University of Alabama

TUSCALOOSA, ALABAMA

2022

ABSTRACT

The present study sought to analyze the moderating effects of resistance to persuasion upon the relationship between individualism/collectivism, uncertainty avoidance, political ideology, traditional and social media perception, and social media usage and COVID-19 prevention measures on both the attitudinal and behavioral dimension. To accomplish this, a survey questionnaire was administered via Amazon mTurk, a service that connects survey respondents to relevant surveys in exchange for compensation. This recruitment method was chosen because it produced a more representative sample that recruiting from the university.

Data was analyzed using multiple regression analysis in SPSS with resistance to persuasion as the moderating variable. The results showed that COVID-19 prevention attitudes were significantly related to collectivism, uncertainty avoidance, political ideology, traditional and social media perception, and social media usage. COVID-19 prevention behavior was significantly related to collectivism, uncertainty avoidance, political ideology, and traditional media perception. The results also showed that resistance to persuasion alone does not have a significant effect on COVID-19 prevention compliance, but that it is a significant moderating variable in the relationship between COVID-19 attitudes and collectivism, COVID-19 prevention attitudes and behavior and political ideology, COVID-19 behavior and traditional media perception, COVID-19 prevention attitudes and social media perception, and COVID-19 prevention attitudes and behavior and times checking social media.

DEDICATION

This thesis is dedicated to everyone who helped make it happen. To my thesis chair, Dr. Hyoungkoo Khang, for guiding me through the process, to my friends for being my sounding board, to my family for always believing in me, and to my Grandpa Dan for never missing an opportunity to tell me he was proud.

LIST OF ABBREVIATIONS AND SYMBOLS

$\propto$	Chronbach's alpha: index of internal consistency
b	Unstandardized beta
F	Fisher's *F* ratio: the ratio of two variances
M	The mean or average
N	Number of participants
p	The probability of obtaining results at least as extreme as the observed results, assuming H_0 is correct
r	Pearson's product-moment correlation coefficient
R^2	Coefficient of determination
SD	The standard deviation
t	The computed value of a t-test: the ratio of departure of the estimated value of a parameter from its hypothesized value to its standard error
<	Less than
=	Equal to

ACKNOWLEDGEMENTS

I would like to thank The Academy – just kidding. I would really like to thank my thesis chair, Dr. Hyoungkoo Khang, for guiding me through this process and making sure that I produced the best work I possibly could. Your dedication to my success did not go unnoticed and is very much appreciated. I also want to thank my committee members, Dr. Brian Britt and Dr. Jiyoung Lee, for offering their expertise in the completion of this manuscript. I would also like to thank Dr. Kenon Brown for assisting me with the thesis process generally and being there any time I had questions. This would not have been possible without the support I received from many professors, so thank you all.

I would also like to thank my family and friends for being there for me throughout the trials and tribulations of writing this manuscript. To my parents, Tavia and Chris, thank you for always believing in me since the very beginning; I could not have gotten this far without your constant support. To all of my friends, thank you for being there when I needed to let off steam; it was more vital than you know.

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INTRODUCTION

In late 2019, a pneumonia-like virus was discovered in the Wuhan province of China; by January 3, 2020, there were 44 cases of reported pneumonia of "unknown etiology (unknown origins) (World Health Organization, 2020)." The virus made its way around the world, eventually becoming known as COVID-19, or the Coronavirus. On February 3, 2020, then-President Trump declared a nationwide emergency just three days after the WHO had declared a global emergency as a result of Coronavirus spread (AJMC Staff, 2021). On March 11, 2020, the World Health Organization (WHO) officially declared COVID-19 outbreak a global pandemic (Cucinotta & Vanelli, 2020). Since the first reported case of COVID-19, the pandemic has wreaked havoc across the world, bringing countries to a full halt, and revealing the societal issues that were exacerbated by the circumstances of the pandemic (LaFee, 2021). Due to the nature of this pandemic, it was incumbent upon individuals to take up recommended public health measures, such as wearing a face covering or mask, increasing hand washing, social distancing, and remaining at home, themselves. The federal government left it to state and local governments to put mandates in place if they chose to do so, which led to confusion due to different policies in different states, and in some situations, different counties within the same state (Franck, 2021). This led to a divide: those who were willing to follow COVID-19 prevention measures, and those who were not (Bélanger & Leander, 2020). This study seeks to understand the role that resistance to persuasion played in the choice to adhere or not adhere to COVID-19 prevention guidelines. This study also seeks to examine the role that resistance to persuasion played as a moderating variable in the relationship between

individualism/collectivism, uncertainty avoidance, political ideology, perception of media coverage from both mainstream and social media outlets, and/or social media usage and COVID-19 prevention attitudes and behavior.

The United States' failure during COVID-19 pandemic is no secret. On March 11, 2020, the World Health Organization (WHO) declared COVID-19 a pandemic (AJMC Staff, 2021). Just eight days later, California became the first state to issue a stay-at-home order, followed by many other states (AJMC Staff, 2021). On May 28, 2020, the total deaths from COVID-19 in the United States surpassed 100,000 (AJMC Staff, 2021). Almost two years later, on May 20, 2022, the United States surpassed 1,000,000 deaths due to COVID-19 (CDC, 2022). To put that into perspective, Brazil had the second-most deaths from COVID-19 with 665,722 deaths on May 20, 2022 (Johns Hopkins University, 2022). In the United States, after the initial shutdown, it was incumbent upon individuals to decide whether or not to adhere to prevention measures, such as increased hand washing, social distancing, wearing a mask, and, later on, getting vaccinated against COVID-19, rather than being required to by a federal legal mandate. States did implement mask mandates and stay-at-home orders, but there was no robust federal response to the pandemic, leaving citizens confused about who to listen to and what to do. A study from July 2020 found that "the general public in the United States and United Kingdom appears to have important misconceptions about COVID-19 (Geldsetzer, 2020)." Many people turned to social media to find answers, but some of those answers were actually misinformation, which the spread of "can strongly influence people's behavior and alter the effectiveness of the countermeasures deployed by governments (Cinelli et al., 2020)." If people were receiving misinformation from social media, or from other media sources, that could have influenced how they responded to persuasive messages regarding COVID-19 prevention measures. Other

aspects, such as individualism/collectivism and political ideology, were also of interest in this study.

Overall, this study seeks to examine how resistance to persuasion plays a role in moderating varied independent variables that are suggested to affect one's COVID-19 prevention compliance. A study from July 2021 found that people fell into two groups: compliant and not compliant (Kleitman, et al., 2021). The positive finding is that 90% of people fell into the compliant group, but that leaves 10% of the population putting themselves and others at risk (Kleitman, et al., 2021). Of course, the variables chosen for this study are not all of the possible reasons one could neglect to take up COVID-19 prevention measures, but the chosen variables provide data for a robust analysis into why people might not adhere to COVID-19 prevention guidelines. The chosen independent variables are: resistance to persuasion, individualism/collectivism, which refers to how important group relations are in a society, uncertainty avoidance, which refers to how risk-averse someone is, political ideology, perception of media coverage from both traditional and social media outlets during the COVID-19 pandemic, and social media usage, along with demographic variables. Resistance to persuasion was chosen as a moderating variable because people may be resistant to the persuasion of adhering to COVID-19 prevention guidelines for a number of reasons. The dependent variables to be studied are COVID-19 prevention attitudes and behavior.

Individualism/collectivism was chosen because much of the existing literature regarding COVID-19 prevention measures has to do with how individualist or collectivist a society is, so this study seeks to examine that at the individual level. Uncertainty avoidance was also chosen because much of the existing literature regarding COVID-19 prevention measures refers to uncertainty avoidance as a reason people would be hesitant to take up COVID-19 prevention

measures. Political ideology was chosen because of the obvious politicization and polarization of the COVID-19 pandemic in the United States (Hart et al., 2020). Perception of media coverage from traditional media outlets was chosen because people used traditional media outlets, such as television, newspapers, and radio, to get their news and information. Depending on the source, this could affect their knowledge and beliefs about the COVID-19 pandemic. Perception of social media was chosen for similar reasons; more and more people are getting their news from social media outlets, and the outlet could affect the user's knowledge and beliefs about the COVID-19 pandemic. Social media and traditional media were both chosen to be analyzed because separately, they offer insight into how each media type affects people's knowledge and beliefs during the COVID-19 pandemic, and together, they offer a holistic view of media perceptions generally across the United States. Social media usage was chosen because studies have shown that social media usage can lead to negative perceptions regarding COVID-19 protocol, including the belief in conspiracy theories (Allington, et al., 2021). This study seeks to determine if increased social media usage negatively affects COVID-19 attitudes and behavior. The chosen demographic variables are: age, gender, race, education level, and state of residence. Age was chosen because older adults are more susceptible to COVID-19, so age may significantly affect people's decision to follow COVID-19 prevention guidelines. Gender, race, education level, and state of residence were chosen because this study seeks to explore whether or not there is a relationship between those variables and adherence to COVID-19 prevention guidelines. By analyzing this selection of variables, this study will contribute to the literature a more holistic view of why people would not take up COVID-19 prevention measures. Past research has found that individualism/collectivism, uncertainty avoidance, and social media usage have been associated with adherence to COVID-19 prevention guidelines, but none of the

studies have studied each of those variables in concert, as this study will. This study will also contribute to the literature regarding resistance to persuasion by providing more insight into resistance to persuasion on the individual level. The practical implications of this study are great, as the results can be used to show how to best communicate during times of mass crisis such as the COVID-19 pandemic.

To measure the chosen variables, a survey was conducted asking about general beliefs, COVID-19 behaviors and beliefs, and demographic questions, using Amazon mTurk to recruit respondents in order to have a more representative sample than a sample recruited from the university. Data was then analyzed using multiple regression analysis in SPSS in order to test for the moderation effects of resistance to persuasion on relationships between the independent variables (individualism/collectivism, uncertainty avoidance, political ideology, perception of traditional and social media coverage, social media usage, and demographic variables) and the dependent variables, COVID-19 attitudes and behaviors. There is then a discussion of the results, going over each research question and hypothesis.

LITERATURE REVIEW

In this literature review, these subjects will be covered in detail, but to quickly summarize, resistance to persuasion refers to an individual's resistance to a persuasive effort, such as trying to convince someone to wear a mask or social distance when out in public. Individualism/collectivism refers to how individualist or collectivist a person is, basically meaning how integrated into groups a person is. Those who are more integrated in groups are more collectivist, and therefore are more willing to take up public health measures for the good of the group, while individualists may not see the personal benefit in taking up public health measures, so they will not do so. Uncertainty avoidance refers to how people feel about unstructured situations, such as the COVID-19 pandemic, especially in the beginning. Political ideology refers to how liberal or conservative a person is regarding their political views. Perception of media coverage refers to how people perceived media coverage of the COVID-19 pandemic from both traditional and social media outlets in terms of trustworthiness, whether it was unbiased or biased, and other factors. Social media usage refers to how often a person is on social media and how that might change their perception of the COVID-19 pandemic. In this study, each variable will be investigated in terms of how it interacts with COVID-19 attitudes and behaviors, as well as the moderation effects resistance to persuasion has on the relationship between the independent variables and COVID-19 attitudes and behaviors.

Resistance to Persuasion

Resistance to Persuasion has been widely studied among psychologists and communications researchers. Resistance can be broadly defined as a "reaction against change (Knowles & Linn, 2014)." So, resistance to persuasion can be defined as a reaction against change in the face of a persuasive attempt. In this study, the main effects of resistance to persuasion upon COVID-19 prevention attitudes and behavior, as well as its effects as a moderating variable in the relationship between the independent variables and COVID-19 prevention attitudes and behavior, will be examined.

People tend to avoid being persuaded. As such, when presented with a persuasive message or behavior, individuals have a litany of resistance methods at their disposal. According to the Persuasion Knowledge Model, people develop persuasion knowledge over the course of their lifetimes, which is personal knowledge about the tactics used in persuasion attempts (Friestad & Wright, 1994). This persuasion knowledge leads to resistance to persuasion in that people develop psychological techniques to avoid being persuaded (Ahluwalia, 2000). Ahluwalia's (2000) study showed that when one resistance mechanism fails, others become stronger. For example, the study "demonstrated that the decreased effectiveness of biased assimilation led to the emergence of another form of resistance: relative weighting, when individuals attempt to minimize the influence on their overall evaluation by decreasing the weight given to the attribute(s) negatively influenced by the information (Ahluwalia, 2000)." When biased assimilation, a resistance to persuasion technique, fails, another technique, relative weighting, comes in its place. This could potentially be replicated for a number of resistance techniques that people have. The study also took into account an individual's commitment to their opinion or action that was being persuaded against. In that regard, "low commitment

individuals demonstrated a tendency to generate inferences about the other attributes on the basis of negative information (Ahluwalia, 2000).” In contrast, “committed individuals had a tendency to isolate the effects of negative information from other attributes in the representation. This appears to be fairly effective even in the face of difficult to refute negative information (Ahluwalia, 2000).” It is clear that highly committed individuals are more difficult to persuade because they are able to compartmentalize the negative information they receive, and it appears that technique results in a strong show of resistance.

It is also important to examine the individual differences in resistance to persuasion. Knowles & Linn (2014) “examined how individuals’ meta-beliefs about their general susceptibility to persuasive attempts can affect their resistance to persuasive communications.” Essentially, this means that people’s individual beliefs about their own resistance to persuasion affects how persuaded they are by a message. This further breaks down the psychological constructs around resistance to persuasion by deducing it to an individual level. Put simply, those who believe that they are more resistant to persuasion will be less persuaded, while those who believe they are not resistant to persuasion will be more persuaded (Knowles & Linn, 2014). However, this only occurs in low-elaboration environments (when people don’t exert much mental energy to think about or process the message that is presented to them). In high elaboration environments, there is a sort of boomerang effect: “when elaboration is relatively high, participants showed no direct effects of their meta-beliefs. In fact, there was a tendency for a reverse effect, demonstrating more persuasion when people thought they were difficult to persuade. (Knowles & Linn, 2014).” This is interesting because it shows that if you can get people to think more about a persuasive message, they might be more persuaded by the message than if they did not have to think very hard about it.

It is clear that people have a plethora of techniques at their disposal whenever they encounter a persuasive message. One of the questions that surrounds persuasion is how to persuade people who don't want to be persuaded. In relation to the COVID-19 pandemic, it is clear that a portion of the population was resistant to persuasion when it came to messages regarding public health behavior. This could have been due to a variety of factors, which is why resistance to persuasion was studied as a moderating variable.

Based on past literature, the following hypotheses are proposed:

H1: Resistance to persuasion to COVID-19 prevention protocol will be negatively related to attitudes toward COVID-19 prevention protocol.

H2: Resistance to persuasion to COVID-19 prevention protocol will be negatively related to COVID-19 prevention behaviors.

Resistance to Persuasion and COVID-19 Compliance

Much of the research regarding COVID-19 compliance behaviors focuses on the individualism/collectivism and uncertainty avoidance constructs of Hofstede's Five Dimensions of Cultural Values. Individualism/collectivism is related to the integration of individuals into primary groups, and uncertainty avoidance is related to the level of stress in a society in the face of an unknown future (Hofstede, 2011).

In a study conducted by Lu, Jin, & English (2021), the researchers found that more collectivist U.S. states and countries were higher in mask usage than more individualist places. These results were replicated across three different studies that they conducted throughout the U.S. and in 67 different countries. Overall, their research "highlights the importance of collectivism in times of crisis (Lu, et al., 2021)." More collectivist countries tend to fare better in societal crises than more individualist countries. Indeed, "East Asia was a global leader in

preventing the spread of COVID-19 because of the vigilant public concern for public safety and compliant with public safety measures (Liu, 2021).” In African countries, “leaders coordinated their responses, and bought into a continent-wide African Medical Supplies Platform that prevented panicked competition for scarce supplies (Liu, 2021).” This is in stark contrast to Western countries, where outbreaks of coronavirus were not well-contained, and there was a strain on the medical community at the beginning of the pandemic to get Personal Protective Equipment (PPE) (Cohen & Rodgers, 2020). This again highlights the importance of collectivism during a mass crisis. One study of 94 countries empirically found that “individualism was positively correlated with COVID-19 prevalence, mortality, and case fatality rates; conversely measures of collectivism were negatively correlated with those parameters (Rajkumar, 2021).” These results show that individualism can have dire consequences related to the COVID-19 pandemic, including increased case and death rates in more individualist countries.

One of the reasons that people may have been hesitant to comply with public health measures is the politicization of the virus. One study found that “compared to liberals, conservatives are less likely to trust science and scientific organizations such as the CDC and the WHO and rather rely on information provided by politicians of their own political persuasion. As a result, they are less informed about the pandemic, are less fearful of getting infected, and are also less prepared to comply with the health recommendations (Stroebe, et al., 2021).” This shows that conservatives, or those who choose not to listen to recommended guidance, are receiving bad information regarding COVID-19, and could be putting themselves and others at risk.

Individualism/Collectivism

Individualism/collectivism is a measure of cultures first introduced by Geert Hofstede. It refers to "the degree to which people in a society are integrated into groups (Hofstede, 2011)." In individualist societies, people are expected to be independent and to look after themselves. In collectivist societies, group values are considered highly important, and it is the norm for people to be more dependent on one another. Western societies tend to be more individualist, while eastern societies are considered more collectivist. In this study, we seek to explore the relationship between how individualist or collectivist a person is and how that affects their willingness to adhere to COVID-19 prevention guidance.

One of Geert Hofstede's Five Cultural Dimensions is individualism/collectivism. Hofstede defined the terms as follows: "Individualism stands for a society in which the ties between individuals are loose; everyone is expected to look after himself or herself and his or her immediate family only," while "collectivism stands for a society in which people from birth onwards are integrated into strong, cohesive ingroups, which throughout people's lifetime continue to protect them in exchange for unquestioning loyalty (Berry et al., 1997, pp. 10)." The United States is considered to be very collectivist, but there are differences among the states (Vandello & Cohen, 1999). Vandello and Cohen (1999) found "a general pattern of relative collectivism in the South, particularly in the former slave states of the Deep South, with maximum individualism in the sparsely populated Great Plains and Mountain West." This shows that there are individual differences in individualism/collectivism throughout the United States, and that could have an effect on an individual's choice to adhere to COVID-19 prevention guidelines. Interestingly, researchers did not see divide among states on how individualist/collectivist they are, but did see a divide regarding political ideology in that red

states were less likely to take up COVID-19 prevention measures than blue states. One could think that states would split into collectivist states being more likely to take up COVID-19 prevention measures, but that did not seem to be the case. This could be due to the fact that Conservative leaders and pundits touted slogans such as "don't tread on me," a phrase that espouses liberty and individualism in the face of oppression, when states started to put mask mandates in place, which created a more individualist environment. Even though the South is considered more collectivist generally, this individualist environment could override that collectivist tendency.

Thus, a research question is asked as follows:

RQ1: Does resistance to persuasion significantly affect the relationship between individualism/collectivism and COVID-19 prevention measures?

Based on the past literature, the following hypotheses are proposed:

H3: People higher in collectivism will be less resistant to COVID-19 prevention measures.

H3-1: People higher in collectivism will exhibit more positive attitudes toward COVID-19 prevention protocol.

H3-2: People higher on the collectivism scale will follow more COVID-19 prevention protocols.

Uncertainty Avoidance

Uncertainty Avoidance is another of Hofstede's dimensions for assessing cultures. Uncertainty avoidance "indicates to what extent a culture programs its members to feel either uncomfortable or comfortable with unstructured situations (Hofstede, 2011)." This applies to the COVID-19 pandemic because people were thrust into unstructured situations where they were

not sure what would happen next. Especially in the beginning of the pandemic, there was a nationwide panic over how bad the virus was and how bad things would get, leading to behavior such as panic buying (Ntontis, et al., 2022). Psychologically, uncertainty avoidance can lead to the need for cognitive closure, which is why people behave in seemingly strange ways when faced with an uncertain situation (Gründl & Aichholzer, 2020). This study seeks to understand the role that uncertainty avoidance had in complying with COVID-19 prevention measures.

Those high in uncertainty avoidance tend to avoid situations in which they do not know the outcome, while those low in uncertainty avoidance tend to be more comfortable taking risks. This poses an interesting problem regarding the COVID-19 pandemic because people did not know the long-term outcomes of prevention measures, and they also did not know the outcome of catching the virus. It would make sense that the more risk-averse portion of the population would be more willing to take up COVID-19 preventions, but with the spread of misinformation and initial confusion about masks, people did not know what to think (Bartolome, 2020). These feelings are not exclusive to the COVID-19 pandemic, however. Uncertainty avoidance is part of our psychological processes every day and entails two motivations: epistemic avoidance and affinity for an exclusive identity (Gründl & Aichholzer, 2020). Epistemic avoidance refers to avoidance related to knowledge, and exclusive identity refers to one having an identity that is different than those around them. In that study, Gründl & Aichholzer describe uncertainty avoidance as "deep-rooted individual differences in people's need for certainty. Uncertainty avoidance is also referred to as intolerance of uncertainty or ambiguity, the need to manage uncertainty, such as the need for cognitive closure, the need for order or low openness to experience and familiarity, preference for structure and repetitive tasks, and preference for simplicity and decisiveness in contrast to extended rumination." Societies that are strong in

uncertainty avoidance tend to "try to minimize the possibility of such situations by strict behavioral codes, laws and rules, disapproval of deviant opinions, and a belief in absolute truth (Gründl & Aichholzer, 2020)." Culturally, uncertainty avoidance tends to be higher in Eastern and Central European countries, in Latin countries, in Japan and in German speaking countries, and lower in English speaking, Nordic, and Chinese culture countries (Hofstede, 2011). Individually, however, results show that uncertainty avoidance influences people's assumptions about ritualistic, harmonious, and aggressive communication (Merkin, 2006). This can affect how someone would receive a message, and their reaction to that message. That same study found that "when faced with uncertainty, strong-uncertainty avoidance culture members filter out the senders' message and focus on reducing uncertainty instead of listening to others' messages (Merkin, 2006)." This means that people who are strong in uncertainty avoidance are more focused on resolving their own cognitive dissonance than listening to the message being sent to them.

Thus, a research question is asked as follows:

RQ2: Does resistance to persuasion significantly affect the relationship between uncertainty avoidance and adherence to COVID-19 prevention measures?

Based on the past literature, the following hypotheses are proposed:

H4: People higher in uncertainty avoidance will be less resistant to COVID-19 prevention measures.

H4-1: People higher in uncertainty avoidance will exhibit more positive attitudes toward COVID-19 prevention protocol.

H4-2: People higher in uncertainty avoidance will follow more COVID-19 prevention protocols.

Political Ideology

From the beginning of the pandemic, conservative public figures downplayed the pandemic and the severity of the virus, including those in the Trump administration, and then-president Trump himself. According to NBC News, citing a congressional report, the Trump White House "deliberately undermined the U.S. response to the Coronavirus pandemic for political purposes (Shabad, 2021)." According to the official House of Representatives Select Subcommittee on the Coronavirus Crisis Year-end Staff Report, "the Trump administration was responsible for a series of critical failures that undermined the nation's ability to respond effectively to the Coronavirus pandemic," including blocking and ignoring official recommendations from the Center for Disease Control and Prevention (CDC) and WHO (SSCC, 2021). In addition to downplaying the severity of COVID-19, and ignoring the advice of health experts, the Trump administration also touted "cures" for COVID-19, including Hydroxychloroquine and Ivermectin, neither of which have been approved for COVID-19 treatment (Commissioner, 2021; National Institute of Health, 2021). This begs the question, why did a significant portion of the population ignore advice from health experts to heed the advice of politicians and other figures with no medical experience? The Health Belief Model has been used heavily in past health behavior research and uses "information about an individual's values and expectations to examine why some individuals take advantage of health programs or alter their behavior to improve their health and others do not (Boslaugh, 2019). According to Boslaugh, the health belief model consists of five components: perceived threat, perceived benefits, perceived barriers, cues to action, and self-efficacy. These components work together to influence an individual's behavior; in this case, whether or not they will adhere to COVID-19 prevention behavior recommendations. Based on this model, the question evolves: How did a group of

powerful conservatives influence the behavior of a large percentage of the population, given what the Health Belief Model has shown us, and more broadly, how did the political polarization of the U.S. at the time influence people's health decisions?

For some people, recommended health protection measures became a matter of political debate rather than a matter of public health and protecting the community at large. From the beginning of the pandemic, conservative TV personalities and leaders downplayed the severity of contracting COVID-19 to their audiences and voters, even holding indoor events such as political rallies, despite guidance from the CDC and WHO to remain at home, and evidence that COVID-19 cases increased following these rallies (Waldrop & Gee, 2020). Despite past evidence that conservatives are more risk-averse than liberals, conservatives were less likely to adhere to public health recommendations and mandates regarding COVID-19 (Stroebe et al., 2021). This shows how powerful political ideology can be, even in the face of a deadly virus. This phenomenon can be partially explained by Bartels (2002). He believes that "partisan bias in political perceptions plays a crucial role in perpetuating and reinforcing sharp differences in opinion between Democrats and Republicans (Bartels, 2002)." This can be applied to the COVID-19 pandemic, as Republicans and Democrats had very different views of the pandemic, with Democrats mostly adhering to COVID-19 prevention guidelines, and democrat-led states being the first to impose restrictions to curb the spread of the coronavirus, and Republicans choosing to ignore the pandemic or tout that it is no worse than the flu (Cillizza, 2020). Many researchers attribute at least part of this increasingly partisan divide to social media. Bail, et al. (2018) found that when exposed to Democratic-leaning messages, Republicans doubled-down and "exhibited significantly more conservative views posttreatment." This was due to what the researchers described as "backfire effects," where the person receiving a message that holds an

opposite viewpoint from their own will hold on to their previously held beliefs even harder than before (Bail, et al., 2018). Another issue on social media is what researchers describe as an echo chamber, or "patterns of information sharing that reinforce preexisting political beliefs by limiting exposure to opposing political views (Bail, et al., 2018)." These echo chambers are exacerbated by social media algorithms that are trained to feed people information that will result in some sort of emotional reaction – mostly anger and outrage (Cinelli, et al., 2021). Echo chambers make it nearly impossible to break through to the other side of the political spectrum, even if the information is factual. People on both sides of the political spectrum experience echo chambers, whether it is of their own doing, by following only people with the same political ideology, or an algorithm that is feeding them messages that it knows they will respond to.

According to Zhuravskaya, et al. (2020), "the two most important distinguishing features of the new social media are low barriers to entry and reliance on user-generated content." While these are the features that bring the good of social media into the world, there are also negative factors that come from this low barrier to entry environment. One of those negative effects is the potential spread of misinformation due to the combination of low entry barriers and "the unprecedented speed with which users can share content on social media. (Zhuravskaya, et al., 2020)." This spread of misinformation can lead to an increase in political misperceptions in which people hold opinions based on claims that are untrue (Zhuravskaya, et al., 2020). However, this study found that, among the democratic public, "the available evidence about whether social media increase political polarization is not conclusive (Zhuravskaya, et al., 2020)." That is significant because many people attribute the increased political polarization in the United States to an increase in social media usage. While it is true that those that believe the misinformation they are exposed to do become more politically polarized, most of the public

does not subscribe to that same idea. In fact, one study by Fiorina & Abrams (2008) found that "the distribution of ideology in the American public has not changed for more than three decades." This means that the distribution of liberals and conservatives in the United States has remained relatively stable over the past 30 years, and that this current time is not more politically polarized than any other time. There are exceptions to this, of course. A Pew Research Poll (2014) found that divisions of political ideology "are greatest among those who are most engaged and active in the political process." That includes people who closely follow politics and participate in the political process by volunteering, donating, or voting in every election. Taken altogether, this means that while most of the public is not as politically polarized as some perceive it to be, those who are very active in the political process are more polarized than in past decades.

Thus, a research question is asked as follows:

RQ3: Does resistance to persuasion significantly affect the relationship between political ideology and adherence to COVID-19 prevention measures?

Based on past literature, the following hypotheses are proposed:

H5: People who identify as more Conservative (than Liberal) will be more resistant to COVID-19 prevention measures.

H5-1: People who identify as more Conservative (than Liberal) will exhibit more negative attitudes toward COVID-19 prevention protocol.

H5-2: People who identify as more Conservative (than Liberal) will follow fewer COVID-19 prevention protocols.

Traditional Media Perception

This study seeks to understand how one's perception of traditional media coverage of COVID-19 could affect that person's willingness to adhere to COVID-19 prevention guidelines. Traditional media includes television, newspaper, radio, and outdoor media. To measure perception of traditional media, we used a five-point scale for: unsophisticated/sophisticated, dishonest/honest, insincere/sincere, old-fashioned/modern, unfriendly/friendly, angry/calm, disgusted/content, resentful/pleasant, and biased/unbiased.

COVID-19 coverage was framed differently based on the different news networks, which changed the way people received information and what information they were receiving regarding COVID-19. Some news channels had 24/7 COVID-19 news coverage and some news channels would mention it not at all or in downplaying the virus (Hubner, 2021). Hubner (2021) found that "early news coverage was focused on two aspects of COVID-19: its spread and subsequent detrimental effect on society." This reveals that early coverage of the pandemic was dismal at best, and alarmist at worst. Earlier in the pandemic, people relied on politicians rather than scientific experts and public health officials, even in the months after COVID-19 had been declared a pandemic. This suggests a "troubling pattern where the health effects of COVID-19 had yet to reach the forefront of news coverage (Hubner, 2021)." This is due to the fact that politicians were generally not discussing the health effects of COVID-19, either because that is not their area of specialty, or they did not want to discuss the pandemic. Either way, it resulted in some people not having the proper knowledge to protect themselves against COVID-19. For example, a study conducted by Jurkowitz & Mitchell (2020) into the differences in COVID-19 beliefs and behaviors by specific news source: Fox News, CNN, or MSNBC found that "the group that names MSNBC as their main news source is far more likely than the Fox News group

to answer correctly that the coronavirus originated in nature rather than in a laboratory and that it will take a year or more for the vaccine to become available (Jurkowitz & Mitchell, 2020).” That “correct” information was based on knowledge that scientists had at the time. Since then, it has become a matter of scientific debate whether or not COVID-19 originated in a laboratory (World Health Organization, 2022). That is due largely to the spread of misinformation on Fox News throughout the pandemic (Bump, 2021). Jurkowitz & Mitchell (2020) found that “53% of the Fox News group said they had seen a lot or some made-up news.” Fox News viewers being exposed to false or misleading information regarding the COVID-19 pandemic puts everyone in danger because they are more likely to believe false claims and conspiracies about the coronavirus, and therefore less likely to protect themselves and others from the virus (Bump, 2021).

Another issue that can come from media is agenda setting. This occurs because “the media implicitly shape public opinion on the issues they cover and, as a result, influence public attitudes and behaviors (Buturoiu & Voloc, 2021).” This makes the media very powerful and influential in society, especially during the COVID-19 pandemic when so many people were relying on media for any information regarding COVID-19. This is due to people’s “need for orientation, the psychological concept that refers to the tendency of people to create a ‘map’ of their world based on the information they receive from others (acquaintances or the media) in order to become familiar with their ‘surroundings’ (Buturoiu & Voloc, 2021).” People are uncomfortable being in a state of unknowing, so during the pandemic, they were willing to turn to sources that they may not normally turn to, such as TV news programs. Relying on these programs did not come without its issues, however, even if all of the information was accurate. Olagoke, Olagoke, & Hughes (2020) found that, in the early days of the COVID-19 pandemic,

"in an attempt to stimulate public response, threat perception, and persuade people to comply with the preventative policies and regulations, the mainstream media rely on producing news content that will increase the perceived self-efficacy to protect, vulnerability to disease, and severity of the pandemic outbreaks." It was necessary for mainstream media to impart on people that the coronavirus was to be taken seriously, but over-exposure to this type of information "may negatively impact mental health (Olagoke, et al., 2020)." Indeed, the WHO found a 25% increase in anxiety and depression worldwide due to the COVID-19 pandemic (Brunier & Drysdale, 2022). While it is important to consume mainstream media to stay informed about COVID-19, it is obvious that consuming too much media can have a detrimental effect on people's mental health. However, Olagoke, Olagoke, & Hughes (2020) concluded that "perceived vulnerability mediated the relationship between exposure to COVID-19 news on the mainstream media and depressive symptoms." While people needed to consume mainstream media to know what preventative measures to take, it was not beneficial to be constantly bombarded with COVID-19 news at all hours of the day.

Thus, a research question is asked as follows:

RQ4: Does resistance to persuasion significantly affect the relationship between perception of media coverage during the COVID-19 pandemic from traditional media outlets and adherence to COVID-19 prevention measures?

Based on the past literature, the following hypotheses are proposed:

H6: People who perceive traditional media more positively will be less resistant to COVID-19 prevention measures.

H6-1: People who perceive traditional media more positively will exhibit more positive attitudes toward COVID-19 prevention protocol.

H6-2: People who perceive traditional media more positively will follow more COVID-19 prevention protocols.

Social Media Perception

This study seeks to understand how one's perception of coverage of the COVID-19 pandemic from social media could affect that person's willingness to adhere to COVID-19 prevention guidelines. Social media include Facebook, Instagram, Twitter, Snapchat, TikTok, etc.

Social media have become a source of information for millions of people around the world. Due to its unregulated nature, social media allow for the rapid dissemination of information, which has its pros and cons. One of the main issues is the dissemination of misinformation and conspiracy theories, which can directly affect one's health in regard to the COVID-19 pandemic by showing misinformation regarding the preventative measures or the existence of the virus at all. This also leads to an "infodemic" of both facts and misinformation, making it difficult for social media users to distinguish between the two. Cinelli, et al. (2020) found that "social media platforms such as YouTube and Twitter provide direct access to an unprecedented amount of content and may amplify rumors and questionable information." When users are exposed to this information, it can shape their beliefs and behaviors, which had consequences during the COVID-19 pandemic that may not be present during non-pandemic times. The main issue was that misinformation surrounding the virus, of which there was plenty, led people to believe that the requested prevention measures were ineffective or unnecessary, which could've led to them or someone around them catching the virus. Another study found that "the use of social media as a source of information about COVID-19 has been correlated with stronger beliefs in conspiracy theories and with less-protective behaviors during the pandemic

(Cuello-Garcia, et al., 2020)." These conspiracy theories could include blaming 5G, blaming Bill Gates or saying the vaccine is a tracker for Microsoft, thinking the U.S. military imported COVID-19 into China, blaming GMOs, thinking the pandemic is being manipulated by the "deep state," believing COVID is a plot by Big Pharma, believing that death rates are being inflated, or denying the existence if COVID-19 at all (Lynas, 2020). These conspiracy theories were widely circulated, and the more people see something, the more likely they are to believe it to be true. Allington, et al. (2021) found that "YouTube and Facebook have been identified as major vectors of dissemination of conspiracy beliefs and misinformation, on medical and other topics. Most studies of Twitter suggest it plays a similar role." These are the most popular social media websites of our time, with Facebook alone having 2.8 billion users worldwide (We Are Social, 26 Jan 2022), making them extremely influential to users.

Journalists became another main source for news, especially on social media, and Twitter specifically. Many journalists use Twitter to find out news quickly and report on breaking news. Their credentials as journalists, seemingly for a publication, makes them a trustworthy and credible source for pandemic news. However, some journalists were criticized for "causing unnecessary panic, promoting risky behavior, displaying negative sentiments, spreading misinformation, and generating a lack of trust among different groups in society (Mellado, et al., 2021)." These perceptions are mainly dependent on the journalist's source, which could vary depending on the "political, technological, social, and cultural context in response to specific events (Mellado, et al., 2021)," in this case, COVID-19. During the pandemic, information from "medical professionals and health specialists, academics, and government authorities and politicians continue to be the most important voices in news coverage (Mellado, et al., 2021)," meaning that they are seen as more trustworthy and credible than other news sources.

Differences can also occur across platforms, as found in Mellado, et al.'s (2021) study. They found that there is a "greater presence of political sources on Facebook and Twitter, of citizen and media sources on Instagram, and of scientific and educational sources on Facebook in most countries (Mellado, et al., 2021)." This difference in information source could lead to people getting different, potentially contradictory, information about the COVID-19 pandemic. In this study, the interest was in the potential moderating effect of resistance to persuasion upon the relationship between social media perception and COVID-19 attitudes and behaviors.

Thus, a research question is asked as follows:

RQ5: Does resistance to persuasion significantly affect the relationship between perception of media coverage during the COVID-19 pandemic from social media outlets and COVID-19 prevention measures?

Based on past literature, the following hypotheses are proposed:

H7: People who perceive social media more positively will be more resistant to COVID-19 prevention measures.

H7-1: People who perceive social media more positively will exhibit more negative attitudes toward COVID-19 prevention protocol.

H7-2: People who perceive social media more positively will follow fewer COVID-19 prevention protocols.

Social Media Usage

Social media have become a prolific part of everyday life, whether or not one chooses to participate in it. Social media can be defined as "digital platforms that facilitate information sharing, user-generated content, and collaboration across people (McFarland & Ployhart, 2015)." Some people are more active on social media than others, and this study seeks to understand how

social media usage can affect resistance to persuasion, specifically upon COVID-19 prevention measures. This study aims to build upon the literature that explains how social media usage has affected COVID-19 health protective behaviors through the lens of resistance to persuasion.

Social media has been growing in popularity since the first social media websites hit the Internet. From the peak of MySpace to the current obsession with TikTok, social media has captured the attention of billions of people, with 4.2 billion active social media users around the world (We Are Social, 2021 Jan. 17). The most popular social media website in the world is Facebook by far with 2.8 billion users worldwide (We Are Social, 2022 Jan 26). In the United States alone, there were 193.9 million Facebook users in 2021 (We Are Social, 2021 Oct. 21).

Due to the vastness of social media and its relative newness, there has not been much research done beyond platform-by-platform studies. One study by McFarland and Ployhart proposes a "contextual framework that identifies the discrete ambient stimuli that distinguish social media contexts from digital communications media (e.g., email) and physical (e.g., face-to-face) contexts." They propose eight discrete ambient stimuli that distinguish social media from physical, nondigital contexts: physicality, accessibility, latency, interdependence, synchronicity, permanence, verifiability, and anonymity (McFarland & Ployhart, 2015). Physicality refers to "the extent to which a given experience is tangible or accessible to the senses (McFarland & Ployhart, 2015)." In social media contexts, there is minimal or no need for physicality as "physical stimuli are almost completely irrelevant for shaping social media interactions." Indeed, it is possible to have an entire interaction on social media without ever physically interacting with that person in a nondigital way. Accessibility refers to "stimuli that are features of social systems or structures that influence the opportunity to join a network (McFarland & Ployhart, 2015)." Social media has few barriers to entry, as it only requires

knowledge of the network's existence and an Internet connection to join that network. In this way, "social media contexts can be more open and accessible than nondigital contexts and even digital communication media (McFarland & Ployhart, 2015)." Latency refers to "how long it takes to share content on the network (McFarland & Ployhart, 2015). It can take seconds for a viral post to circulate on social media, "thus content presented in social media contexts occurs with shorter latency than content presented in nondigital contexts (McFarland & Ployhart, 2015)." Interdependence refers to "the manner in which member interactions are related with one another (McFarland & Ployhart, 2015)." By design, social media allows for "greater interdependence than digital communications media, which in turn are greater than nondigital interactions" because "time and space are no longer barriers to interaction (McFarland & Ployhart, 2015)." When interacting with someone face-to-face, time and space are barriers because you have to physically be there at that time to interact with them. Social media allows users to post content, then users can interact with the content long after it has been posted. There are aspects of social media, such as live videos, that require low interdependence where the user must view the content at a specific time. However, it is sometimes possible to view a live video after it has ended, thus increasing interdependence. Synchronicity refers to "the extent to which members engage in relationships or communication that require them to be temporally 'in tune' (synchronous) versus at their own pace (asynchronous) (McFarland & Ployhart, 2015)." Social media can support both synchronous and asynchronous interactions because some content can be interacted with immediately, while other content can be interacted with after it is posted. Permanence refers to "how long the content that is posted on the social media system exists (McFarland & Ployhart, 2015)." Social media and other digital content can live on indefinitely, as we have been warned about since the advancement of the Internet. Anything that is posted

online, in theory, lasts forever. Verifiability refers to "the extent to which content or information can be checked or reviewed (McFarland & Ployhart, 2015)." Social media content, by its nature, can be checked or reviewed, making it verifiable. Anonymity refers to "the extent to which a person can be identified (McFarland & Ployhart, 2015)." It is possible for someone to remain anonymous online, and "this opportunity for anonymity can lead to alarming behavior (McFarland & Ployhart, 2015)." This behavior can occur because people feel less burdened with the idea of social norms when they have anonymity, so they might do or say something that they would never do in a face-to-face interaction. These eight discrete ambient stimuli can interact with one another, creating the landscape of social media as we know it. They can interact to "directly influence the magnitude and/or directions of relationships among cognition, affect, and behavior," which "increases the likelihood that network members will develop beliefs, assumptions, and attitudes similar to those of their networks (McFarland & Ployhart, 2015)." This creates the "potential for social contagion to happen more often, more quickly, and more broadly (McFarland & Ployhart, 2015)." It is important to understand these eight discrete ambient stimuli and how they work together to create the social media world that has been created. It is particularly important to understand how social media can be used for messaging during a crisis, given the sheer number of people that are active social media users. Those applications can then be applied to future public crises.

Thus, a research question is asked as follows:

RQ6: Does resistance to persuasion significantly affect the relationship between social media usage and adherence to COVID-19 prevention measures?

Based on past literature, the following hypotheses are proposed:

H8: People who use social media more frequently will be more resistant to COVID-19 prevention measures.

H8-1: People who use social media more frequently will exhibit more negative attitudes toward COVID-19 prevention protocols.

H8-2: People who use social media more frequently will follow fewer COVID-19 prevention protocols.

METHODS

To conduct this research study, a Qualtrics survey was used and distributed through Amazon mTurk. Respondents were compensated $1.00 upon completion of the survey. Data was then analyzed using linear regression analysis in SPSS.

Participants

Participants were recruited through Amazon mTurk, an Amazon Web Service that connects potential survey respondents with surveys. Respondents were asked to "answer a survey about your opinions, beliefs, and behaviors both during and not during the COVID-19 pandemic." The survey asked for behaviors and beliefs both during and not during the COVID-19 pandemic to gain a more holistic view of their beliefs and behaviors that are not directly related to COVID-19. Once their response was approved for completeness, participants were compensated $1.00 for their participation in the survey. Participants were recruited through Amazon mTurk rather than through the University because a more representative sample could be utilized. The analysis included 382 respondents (44.4% female; Age(M) = 35-44). Their racial/ethnic makeup was 83.5% White, 10.2% Black/African American, 4.5% Asian, 0.3% Native Hawaiian or Pacific Islander, 1% Hispanic, and 0.5% Other. The regions that respondents are from is based on the five main regions of the United States: West, Southwest, Midwest, Southeast, and Northeast (O'Connor, 2022). There were 80 participants from the Western region (21.5%), 32 participants from the Southwest (8.6%), 77 participants from the Midwest (20.7%), 99 participants from the Southeast (26.6%), and 84 participants from the Northeast (22.6%).

Procedure

Participants completed the questionnaire which consisted of items to measure individualism/collectivism, uncertainty avoidance, social media usage, resistance to persuasion, COVID-19 behaviors and beliefs, perception of both traditional and social media, political ideology, and demographics. See Appendix A for all of the survey questions.

Measures

The following measures were included in the survey questionnaire to evaluate and eventually test the given hypotheses.

Resistance to Persuasion. To measure resistance to persuasion, Briñol et al. (2004)'s Resistance to Persuasion Scale was altered to reflect resistance to COVID-19-specific information. The 16-item Likert-type scale consisted of answers from Strongly Agree (1) to Strongly Disagree (5). Example items include: "I am strongly committed to my opinions regarding COVID-19 protocol" and "My ideas about COVID-19 protocols have been very stable and remain the same over time." Values were then summed to create a single value ($M = 3.46$, $SD = .82$, $\propto = .852$).

Individualism/Collectivism. To measure individualism/collectivism, part of Yoo et al. (2011)'s previously validated CVSCALE was used. The collectivism measure consists of six Likert-type items, with answers ranging from Strongly Disagree (1) to Strongly Agree (5). Example statements include "Individuals should sacrifice self-interest for the group" and "Group welfare is more important than individual welfare." Values were summed to create a single value ($M = 3.39$, $SD = .93$, $\propto = .900$).

Uncertainty Avoidance. To measure uncertainty avoidance, a previously-validated scale from Jung & Kellaris (2004) was used. This measure consists of seven Likert-type items, with

answers ranging from Strongly Disagree (1) to Strongly Agree (5). Example statements include: "I prefer structured to unstructured situations" and "I tend to get anxious easily when I don't know an outcome." Values were summed to create a single value (M = 3.66, SD = .72, ∝ = .824).

Political Ideology. To measure political ideology, we asked respondents to rate their own political ideology on a scale from 1-11, starting at Very Liberal and ending at Very Conservative. Values were then summed to create a single value (M = 5.54, SD = 3.35).

Media Perception. To measure both traditional and social media perception of COVID-19. news coverage, we used a scale that consisted of nine items on a one to five scale: Unsophisticated to Sophisticated, Dishonest to Honest, Insincere to Sincere, Old-fashioned to Modern, Unfriendly to Friendly, Angry to Calm, Disgusted to Content, Resentful to Pleasant, and Biased to Unbiased. Values were then summed to create single values for each variable (Traditional Media M = 3.25, SD = .90, ∝ = .912, Social Media M = 2.77, SD = 1.00, ∝ = .929).

Social Media Usage. To measure social media usage, we asked participants how much time (in hours and minutes) they spent on the Internet the previous day, how much time they spent on social media the previous day, and how many times they had checked social media the previous day. Values were then summed to create single values for each variable (Internet time M = 5.98 hours, SD = 3.45 hours, Social Time M = 2.64 hours, SD = 2.87 hours, Social Media Times Checked M = 1.93 (1-10 times), SD = 1.13).

COVID-19 Attitudes. In this study, COVID-19 attitudes is one of the two dependent variables to be studied. This is the participant's attitude toward COVID-19 prevention measures. To measure COVID-19 attitudes, parts of Clark, et al.'s (2020) COVID-19 Scale was used. These items were evaluated on a Likert-type scale from Strongly Disagree (1) to Strongly Agree

(5). Measures included items such as “Government officials have effectively managed COVID-19” and “I have expressed my opinions on health and safety matters even when others disagree.” Values were then summed to create a single value for the variable (N = 382, M = 3.67, SD = .74, $\propto$ = .797).

COVID-19 Behavior. COVID-19 behavior is the other dependent variable to be studied. This is the participant’s behavior in regard to COVID-19 prevention measures. To measure COVID-19 behavior, parts of Clark et al.’s (2020) COVID-19 Scale was used. These items were evaluated on a Likert-type scale from Strongly Disagree (1) to Strongly Agree (5). Measures included items such as “I have been concerned about my health and have taken active precautions against COVID-19” and “I have chosen not to visit friends and family when it was recommended.” Values were then summed to create a single value for the variable (M = 4.07, SD = .85, $\propto$ = .901).

RESULTS

To analyze the data, multiple regression analyses were run in SPSS. Before that could happen, the variables were mean-centered, and variables were created to analyze the interaction effects between the independent variables and resistance to persuasion. The main effects between resistance to persuasion and COVID-19 prevention attitudes and behavior were also of interest See *Figure 1* for a conceptual model of the analysis.

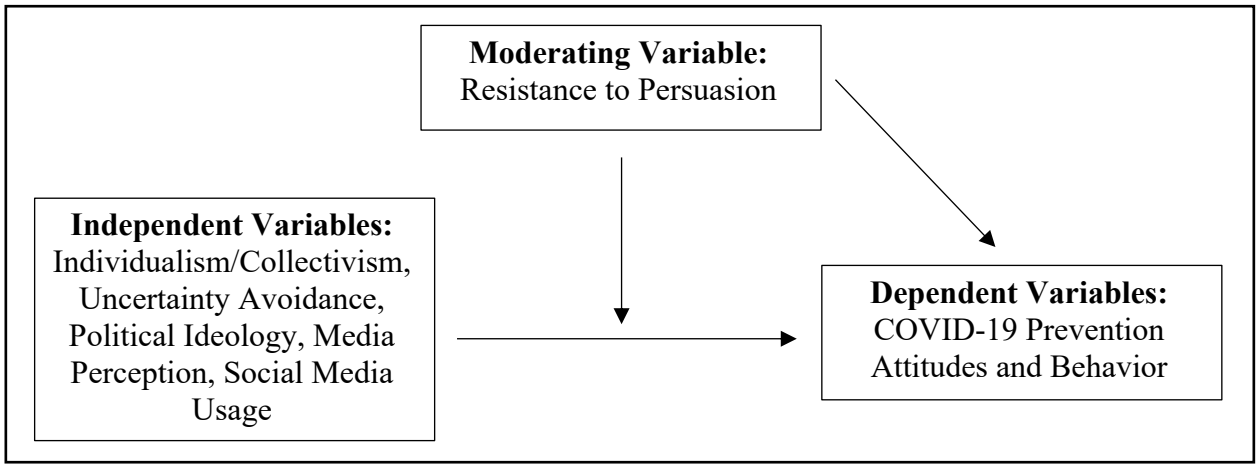

Figure 1

Correlation Analysis

In *Table 1*, the correlations between the independent variables and COVID-19 attitudes examined are presented. The analysis shows that COVID-19 prevention attitudes are significantly related to collectivism ($r = .448, p = .001$), uncertainty avoidance ($r = .157, p = .001$), political ideology ($r = -.154, p = .001$), traditional media perception ($r = .587, p < .001$), social media perception ($r = .299, p < .001$), social media times check ($r = .121, p = .01$), and time spent on social media ($r = .109, p = .02$).

In *Table 2*, the correlations between the independent variables and COVID-19 prevention behavior are presented. The analysis shows that COVID-19 prevention behavior is significantly related to collectivism ($r = .297, p < .001$), uncertainty avoidance ($r = .242, p = < .001$), political ideology ($r = -.304, p < .001$), and traditional media perception ($r = .337, p = < .001$).

Correlations

		Attitudes	Resistance to Persuasion	Collectivism	Resistance to Persuasion * Collectivism	Uncertainty Avoidance	Resistance to Persuasion * Uncertainty Avoidance	Political Ideology	Resistance to Persuasion * Political Ideology	Traditional Media Perception	Resistance to Persuasion * Traditional Media Perception	Social Media Perception	Resistance to Persuasion * Social Media Perception	Times Check	Resistance to Persuasion * Times Check	Social Time	Resistance to Persuasion * Social Time
Pearson Correlation	Attitudes	1.000	-.018	.448	.095	.157	.045	-.154	-.354	.587	.108	.299	-.121	.121	.054	.109	-.021
	Resistance to Persuasion	-.018	1.000	-.320	-.174	-.036	-.038	-.184	-.237	-.236	-.119	-.319	-.355	-.244	-.115	-.235	-.206
	Collectivism	.448	-.320	1.000	.336	.230	.005	.073	-.135	.483	.141	.353	-.053	.232	-.019	.206	-.027
	Resistance to Persuasion * Collectivism	.095	-.174	.336	1.000	.009	.204	-.129	-.089	.142	.422	-.053	.131	-.020	.194	-.024	.205
	Uncertainty Avoidance	.157	-.036	.230	.009	1.000	.112	.122	-.052	.051	.070	.073	-.033	.055	.005	.016	-.044
	Resistance to Persuasion * Uncertainty Avoidance	.045	-.038	.005	.204	.112	1.000	-.044	.218	.059	-.075	-.029	.049	.002	.169	-.033	.138
	Political Ideology	-.154	-.184	.073	-.129	.122	-.044	1.000	-.019	-.043	-.240	.318	-.146	.211	-.048	.182	-.087
	Resistance to Persuasion * Political Ideology	-.354	-.237	-.135	-.089	-.052	.218	-.019	1.000	-.255	-.288	-.147	.245	-.047	.174	-.075	.164
	Traditional Media Perception	.587	-.236	.483	.142	.051	.059	-.043	-.255	1.000	.157	.570	-.106	.221	-.033	.217	-.014
	Resistance to Persuasion * Traditional Media Perception	.108	-.119	.141	.422	.070	-.075	-.240	-.288	.157	1.000	-.101	.364	-.031	.085	-.012	.077
	Social Media Perception	.299	-.319	.353	-.053	.073	-.029	.318	-.147	.570	-.101	1.000	-.030	.359	-.024	.359	-.056
	Resistance to Persuasion * Social Media Perception	-.121	-.355	-.053	.131	-.033	.049	-.146	.245	-.106	.364	-.030	1.000	-.024	.264	-.048	.341
	Times Check	.121	-.244	.232	-.020	.055	.002	.211	-.047	.221	-.031	.359	-.024	1.000	-.190	.351	.011
	Resistance to Persuasion * Times Check	.054	-.115	-.019	.194	.005	.169	-.048	.174	-.033	.085	-.024	.264	-.190	1.000	.010	.379
	Social Time	.109	-.235	.206	-.024	.016	-.033	.182	-.075	.217	-.012	.359	-.048	.351	.010	1.000	-.333
	Resistance to Persuasion * Social Time	-.021	-.206	-.027	.205	-.044	.138	-.087	.164	-.014	.077	-.056	.341	.011	.379	-.333	1.000
Sig. (1-tailed)	Attitudes	.	.360	<.001	.033	.001	.193	.001	<.001	<.001	.018	<.001	.009	.009	.145	.017	.344
	Resistance to Persuasion	.360	.	.000	.000	.245	.231	.000	.000	.000	.010	.000	.000	.000	.012	.000	.000
	Collectivism	.000	.000	.	.000	.000	.458	.079	.004	.000	.003	.000	.151	.000	.355	.000	.297
	Resistance to Persuasion * Collectivism	.033	.000	.000	.	.433	.000	.006	.042	.003	.000	.151	.005	.350	.000	.319	.000
	Uncertainty Avoidance	.001	.245	.000	.433	.	.014	.009	.156	.159	.088	.079	.262	.141	.465	.381	.195
	Resistance to Persuasion * Uncertainty Avoidance	.193	.231	.458	.000	.014	.	.197	.000	.126	.071	.285	.169	.485	.000	.264	.003
	Political Ideology	.001	.000	.079	.006	.009	.197	.	.355	.200	.000	.000	.002	.000	.177	.000	.046
	Resistance to Persuasion * Political Ideology	.000	.000	.004	.042	.156	.000	.355	.	.000	.000	.002	.000	.182	.000	.074	.001
	Traditional Media Perception	.000	.000	.000	.003	.159	.126	.200	.000	.	.001	.000	.020	.000	.263	.000	.393
	Resistance to Persuasion * Traditional Media Perception	.018	.010	.003	.000	.088	.071	.000	.000	.001	.	.024	.000	.274	.050	.406	.067
	Social Media Perception	.000	.000	.000	.151	.079	.285	.000	.002	.000	.024	.	.283	.000	.319	.000	.137
	Resistance to Persuasion * Social Media Perception	.009	.000	.151	.005	.262	.169	.002	.000	.020	.000	.283	.	.322	.000	.175	.000
	Times Check	.009	.000	.000	.350	.141	.485	.000	.182	.000	.274	.000	.322	.	.000	.000	.415
	Resistance to Persuasion * Times Check	.145	.012	.355	.000	.465	.000	.177	.000	.263	.050	.319	.000	.000	.	.425	.000
	Social Time	.017	.000	.000	.319	.381	.264	.000	.074	.000	.406	.000	.175	.000	.425	.	.000
	Resistance to Persuasion * Social Time	.344	.000	.297	.000	.195	.003	.046	.001	.393	.067	.137	.000	.415	.000	.000	.
N	Attitudes	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379
	Resistance to Persuasion	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379
	Collectivism	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379
	Resistance to Persuasion * Collectivism	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379
	Uncertainty Avoidance	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379
	Resistance to Persuasion * Uncertainty Avoidance	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379
	Political Ideology	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379
	Resistance to Persuasion * Political Ideology	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379
	Traditional Media Perception	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379
	Resistance to Persuasion * Traditional Media Perception	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379
	Social Media Perception	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379
	Resistance to Persuasion * Social Media Perception	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379
	Times Check	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379
	Resistance to Persuasion * Times Check	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379
	Social Time	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379
	Resistance to Persuasion * Social Time	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379

Table 1: Correlations for COVID-19 Prevention Attitudes

Correlations

		Behavior	Resistance to Persuasion	Collectivism	Resistance to Persuasion * Collectivism	Uncertainty Avoidance	Resistance to Persuasion * Uncertainty Avoidance	Political Ideology	Resistance to Persuasion * Political Ideology	Traditional Media Perception	Resistance to Persuasion * Traditional Media Perception	Social Media Perception	Resistance to Persuasion * Social Media Perception	Times Check	Resistance to Persuasion * Times Check	Social Time	Resistance to Persuasion * Social Time
Pearson Correlation	Behavior	1.000	.034	.297	.177	.242	.041	-.304	-.320	.337	.321	-.042	.041	-.007	.101	-.022	.004
	Resistance to Persuasion	.034	1.000	-.320	-.174	-.036	-.038	-.184	-.237	-.236	-.119	-.319	-.355	-.244	-.115	-.235	-.206
	Collectivism	.297	-.320	1.000	.336	.230	.005	.073	-.135	.483	.141	.353	-.053	.232	-.019	.206	-.027
	Resistance to Persuasion * Collectivism	.177	-.174	.336	1.000	.009	.204	-.129	-.089	.142	.422	-.053	.131	-.020	.194	-.024	.205
	Uncertainty Avoidance	.242	-.036	.230	.009	1.000	.112	.122	-.052	.051	.070	.073	-.033	.055	.005	.016	-.044
	Resistance to Persuasion * Uncertainty Avoidance	.041	-.038	.005	.204	.112	1.000	-.044	.218	.059	-.075	-.029	.049	.002	.169	-.033	.138
	Political Ideology	-.304	-.184	.073	-.129	.122	-.044	1.000	-.019	-.043	-.240	.318	-.146	.211	-.048	.182	-.087
	Resistance to Persuasion * Political Ideology	-.320	-.237	-.135	-.089	-.052	.218	-.019	1.000	-.255	-.288	-.147	.245	-.047	.174	-.075	.164
	Traditional Media Perception	.337	-.236	.483	.142	.051	.059	-.043	-.255	1.000	.157	.570	-.106	.221	-.033	.217	-.014
	Resistance to Persuasion * Traditional Media Perception	.321	-.119	.141	.422	.070	-.075	-.240	-.288	.157	1.000	-.101	.364	-.031	.085	-.012	.077
	Social Media Perception	-.042	-.319	.353	-.053	.073	-.029	.318	-.147	.570	-.101	1.000	-.030	.359	-.024	.359	-.056
	Resistance to Persuasion * Social Media Perception	.041	-.355	-.053	.131	-.033	.049	-.146	.245	-.106	.364	-.030	1.000	-.024	.264	-.048	.341
	Times Check	-.007	-.244	.232	-.020	.055	.002	.211	-.047	.221	-.031	.359	-.024	1.000	-.190	.351	.011
	Resistance to Persuasion * Times Check	.101	-.115	-.019	.194	.005	.169	-.048	.174	-.033	.085	-.024	.264	-.190	1.000	.010	.379
	Social Time	-.022	-.235	.206	-.024	.016	-.033	.182	-.075	.217	-.012	.359	-.048	.351	.010	1.000	-.333
	Resistance to Persuasion * Social Time	.004	-.206	-.027	.205	-.044	.138	-.087	.164	-.014	.077	-.056	.341	.011	.379	-.333	1.000
Sig. (1-tailed)	Behavior	.	.252	<.001	<.001	<.001	.216	<.001	<.001	<.001	<.001	.206	.215	.450	.024	.332	.465
	Resistance to Persuasion	.252	.	.000	.000	.245	.231	.000	.000	.000	.010	.000	.000	.000	.012	.000	.000
	Collectivism	.000	.000	.	.000	.000	.458	.079	.004	.000	.003	.000	.151	.000	.355	.000	.297
	Resistance to Persuasion * Collectivism	.000	.000	.000	.	.433	.000	.006	.042	.003	.000	.151	.005	.350	.000	.319	.000
	Uncertainty Avoidance	.000	.245	.000	.433	.	.014	.009	.156	.159	.088	.079	.262	.141	.465	.381	.195
	Resistance to Persuasion * Uncertainty Avoidance	.216	.231	.458	.000	.014	.	.197	.000	.126	.071	.285	.169	.485	.000	.264	.003
	Political Ideology	.000	.000	.079	.006	.009	.197	.	.355	.200	.000	.000	.002	.000	.177	.000	.046
	Resistance to Persuasion * Political Ideology	.000	.000	.004	.042	.156	.000	.355	.	.000	.000	.002	.000	.182	.000	.074	.001
	Traditional Media Perception	.000	.000	.000	.003	.159	.126	.200	.000	.	.001	.000	.020	.000	.263	.000	.393
	Resistance to Persuasion * Traditional Media Perception	.000	.010	.003	.000	.088	.071	.000	.000	.001	.	.024	.000	.274	.050	.406	.067
	Social Media Perception	.206	.000	.000	.151	.079	.285	.000	.002	.000	.024	.	.283	.000	.319	.000	.137
	Resistance to Persuasion * Social Media Perception	.215	.000	.151	.005	.262	.169	.002	.000	.020	.000	.283	.	.322	.000	.175	.000
	Times Check	.450	.000	.000	.350	.141	.485	.000	.182	.000	.274	.000	.322	.	.000	.000	.415
	Resistance to Persuasion * Times Check	.024	.012	.355	.000	.465	.000	.177	.000	.263	.050	.319	.000	.000	.	.425	.000
	Social Time	.332	.000	.000	.319	.381	.264	.000	.074	.000	.406	.000	.175	.000	.425	.	.000
	Resistance to Persuasion * Social Time	.465	.000	.297	.000	.195	.003	.046	.001	.393	.067	.137	.000	.415	.000	.000	.
N	Behavior	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379
	Resistance to Persuasion	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379
	Collectivism	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379
	Resistance to Persuasion * Collectivism	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379
	Uncertainty Avoidance	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379
	Resistance to Persuasion * Uncertainty Avoidance	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379
	Political Ideology	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379
	Resistance to Persuasion * Political Ideology	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379
	Traditional Media Perception	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379
	Resistance to Persuasion * Traditional Media Perception	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379
	Social Media Perception	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379
	Resistance to Persuasion * Social Media Perception	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379
	Times Check	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379
	Resistance to Persuasion * Times Check	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379
	Social Time	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379
	Resistance to Persuasion * Social Time	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379

Table 2: Correlations for COVID-19 Prevention Behavior

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-.053	.043		-1.254	.211
	Resistance to Persuasion	.067	.049	.067	1.373	.171
	Collectivism	.268	.049	.268	5.489	<.001
	Resistance to Persuasion * Collectivism	-.087	.044	-.093	-1.962	.051
	Uncertainty Avoidance	.084	.040	.084	2.105	.036
	Resistance to Persuasion * Uncertainty Avoidance	.039	.033	.048	1.166	.244
	Political Ideology	-.177	.044	-.177	-4.055	<.001
	Resistance to Persuasion * Political Ideology	-.260	.046	-.265	-5.674	<.001
	Traditional Media Perception	.434	.054	.435	7.963	<.001
	Resistance to Persuasion * Traditional Media Perception	-.083	.047	-.090	-1.746	.082
	Social Media Perception	-.025	.055	-.025	-.460	.646
	Resistance to Persuasion * Social Media Perception	.012	.048	.013	.254	.800
	Times Check	.041	.044	.041	.922	.357
	Resistance to Persuasion * Times Check	.146	.045	.145	3.287	.001
	Social Time	-.025	.047	-.025	-.540	.590
	Resistance to Persuasion * Social Time	-.014	.055	-.012	-.246	.806

a. Dependent Variable: COVID-19 Prevention Attitudes

Table 3: Coefficients for COVID-19 Prevention Attitudes

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.004	.046		.090	.928
	Resistance to Persuasion	.023	.052	.023	.445	.657
	Collectivism	.188	.052	.190	3.606	<.001
	Resistance to Persuasion * Collectivism	-.055	.047	-.059	-1.164	.245
	Uncertainty Avoidance	.203	.042	.204	4.779	<.001
	Resistance to Persuasion * Uncertainty Avoidance	.027	.035	.034	.760	.447
	Political Ideology	-.223	.047	-.226	-4.794	<.001
	Resistance to Persuasion * Political Ideology	-.268	.049	-.275	-5.467	<.001
	Traditional Media Perception	.316	.058	.320	5.441	<.001
	Resistance to Persuasion * Traditional Media Perception	.056	.051	.061	1.098	.273
	Social Media Perception	-.259	.058	-.261	-4.427	<.001
	Resistance to Persuasion * Social Media Perception	.087	.052	.090	1.684	.093
	Times Check	.054	.047	.055	1.150	.251
	Resistance to Persuasion * Times Check	.162	.048	.162	3.415	<.001
	Social Time	-.053	.050	-.053	-1.055	.292
	Resistance to Persuasion * Social Time	-.079	.059	-.069	-1.330	.184

a. Dependent Variable: COVID-19 Prevention Behavior

Table 4 Coefficients for COVID-19 Prevention Behavior

Resistance to Persuasion

Table 3 and *Table 4* present the coefficients for COVID-19 attitudes and COVID-19 prevention behavior, respectively. They also show the coefficients for the interaction effects of resistance to persuasion.

H1 postulates that resistance to persuasion will be negatively related to COVID-19 prevention attitudes. A regression analysis showed no significant relationship between resistance to persuasion and COVID-19 prevention attitudes (r = -.018, p = .36). H2 postulates that resistance to persuasion to COVID-19 prevention protocol will be negatively related to COVID-19 prevention behavior. For COVID-19 behavior, resistance to persuasion is also not significantly related (r = .034, p = .25). Thus, H1 and H2 are not supported.

Individualism/Collectivism

H3 postulates that people higher in collectivism will be less resistant to COVID-19 prevention measures. H3-1 postulates that people higher in collectivism will exhibit more positive attitudes toward COVID-19 prevention protocol. The correlation analysis shows a significant positive correlation between collectivism and COVID-19 prevention attitudes (r = .448, p = .001). Collectivism is a significant positive predictor of COVID-19 prevention attitudes (β = .268, p < .001), thus supporting H3-1. H3-2 postulates that people higher on the collectivism scale will follow more COVID-19 prevention protocol. The results of the linear regression show a positive correlation between collectivism and COVID-19 prevention behavior (r = .297, p = .001). Collectivism is a significant positive predictor of COVID-19 prevention behaviors (β = .190, p < .001), thus supporting H3-2. The support of both H3-1 and H3-2 provide support for H3.

RQ1 asks "does resistance to persuasion significantly affect the relationship between individualism/collectivism and COVID-19 prevention measures?" To answer this research question, the interaction effects of resistance to persuasion upon the relationship between collectivism and COVID-19 prevention attitudes and behavior can be analyzed. There is a positive correlation between the interaction effects of resistance to persuasion upon the

relationship between collectivism and COVID-19 prevention attitudes ($r = .095, p = .03$). The interaction effect is also a significant predictor of COVID-19 prevention attitudes ($\beta = -.093, p = .05$). For COVID-19 prevention behavior, there is a significant positive correlation between the interaction effect upon collectivism and COVID-19 prevention behavior ($r = .177, p = .001$). However, the interaction effect is not a significant predictor of COVID-19 prevention behavior ($\beta = -.059, p = .25$). These results indicate that the answer to RQ2 is partially, as COVID-19 prevention is only affected by the interaction between resistance to persuasion and collectivism with COVID-19 prevention attitudes and behavior on the attitudinal dimension.

Uncertainty Avoidance

H4 postulates that people higher in uncertainty avoidance will be less resistant to COVID-19 prevention measures. H4-1 postulates that people higher in uncertainty avoidance will exhibit more positive attitudes toward COVID-19 protocol. Uncertainty avoidance and COVID-19 prevention attitudes are significantly positively correlated ($r = .157, p = .001$). Uncertainty avoidance is a significant positive predictor of COVID-19 prevention attitudes ($\beta = .084, p = .04$), thus supporting H4-1. H4-2 postulates that people higher in uncertainty avoidance will follow more COVID-19 prevention protocols. Uncertainty avoidance is significantly positively correlated with COVID-19 prevention behavior ($r = .242, p = .001$). Uncertainty avoidance is a significant positive predictor of COVID-19 prevention behavior ($\beta = .204, p < .001$), thus supporting H4-2. The support of both H4-1 and H4-2 thus support H4.

RQ2 asks "does resistance to persuasion significantly affect the relationship between uncertainty avoidance and adherence to COVID-19 prevention measures?" To answer this question, the interaction effects of resistance to persuasion upon the relationship between uncertainty avoidance and COVID-19 prevention attitudes and behavior was analyzed.

Uncertainty avoidance and COVID-19 prevention attitudes are not significantly correlated (r = .045, p = .19). For COVID-19 prevention attitudes, the interaction of resistance to persuasion and uncertainty avoidance is not a significant predictor of COVID-19 prevention attitudes (β = .048, p = .24). Uncertainty avoidance and COVID-19 prevention behavior are not significantly correlated (r = .041, p = .22). For COVID-19 prevention behavior, resistance to persuasion does not significantly affect the relationship between uncertainty avoidance and COVID-19 prevention behavior (β = .034, p = .45). Since resistance to persuasion does not significantly affect the relationship between uncertainty avoidance and COVID-19 prevention attitudes or behavior, the answer to RQ3 is no.

Political Ideology

H5 postulates that people who identify as more Conservative (than Liberal) will be more resistant to COVID-19 prevention measures. H5-1 postulates that people who identify as more Conservative (than Liberal) will exhibit more negative attitudes toward COVID-19 prevention protocol. Political ideology and COVID-19 prevention attitudes are significantly negatively correlated (r = -.154, p = .001). Political ideology is a significant negative predictor of COVID-19 prevention attitudes (β = -.177, p < .001), thus supporting H5-1. H5-2 postulates that people who identify as more Conservative (than Liberal) will follow fewer COVID-19 prevention protocols. Political ideology is significantly negatively correlated with COVID-19 prevention behavior (r = -.304, p = .001). Political ideology is a significant negative predictor of COVID-19 prevention behavior (β = -.226, p < .001), thus supporting H5-2. The support of both H5-1 and H5-2 offer support for H5.

RQ3 asks “does resistance to persuasion significantly affect the relationship between political ideology and COVID-19 prevention measures?” To answer this question, the interaction

effects of resistance to persuasion upon the relationship between political ideology and COVID-19 prevention attitudes and behavior were analyzed. The interaction of resistance to persuasion and political ideology is significantly negatively correlated to COVID-19 prevention attitudes ($r = -.354, p = .001$). Resistance to persuasion does significantly negatively affect the relationship between political ideology and COVID-19 prevention attitudes ($\beta = -.265, p < .001$). The interaction of resistance to persuasion and political ideology is also significantly correlated with COVID-19 prevention behavior ($r = -.320, p = .001$). For behavior, resistance to persuasion also significantly affects the relationship between political ideology and COVID-19 prevention behavior ($\beta = -.275, p < .001$). Since resistance to persuasion significantly affects the relationship between political ideology and both COVID-19 prevention attitudes and behavior, it can be concluded that the answer to RQ4 is yes.

Traditional Media Perception

H6 postulates that people who perceive traditional media more positively will be less resistant to COVID-19 prevention measures. H6-1 postulates that people who perceive traditional media more positively will exhibit more positive attitudes toward COVID-19 prevention protocol. Traditional media perception is significantly positively correlated with COVID-19 prevention attitudes ($r = .587, p = .001$). Traditional media perception is a significant positive predictor of COVID-19 prevention attitudes ($\beta = .435, p < .001$), thus supporting H6-1. H6-2 postulates that people who perceive mainstream media more positively will follow more COVID-19 prevention protocols. Traditional media perception and COVID-19 prevention behavior are positively correlated ($r = .337, p = .001$). Traditional media perception is a significant positive predictor of COVID-19 prevention behavior ($\beta = .320, p < .001$), thus supporting H6-2. The support of H6-1 and H6-2 offer support for H6.

RQ4 asks "does resistance to persuasion significantly affect the relationship between traditional media perception during the COVID-19 pandemic and adherence to COVID-19 prevention measures?" To answer this question, the interaction effects of resistance to persuasion upon the relationship between traditional media perception and COVID-19 prevention attitudes and behavior were analyzed. The interaction of traditional media perception and resistance to persuasion is significantly positively correlated with COVID-19 prevention attitudes ($r = .108$, $p = .02$). However, the interaction effects of resistance to persuasion upon the relationship between traditional media perception is not a significant predictor of COVID-19 prevention attitudes ($\beta = -.090$, $p = .08$). The interaction effects of resistance to persuasion and traditional media perception and COVID-19 prevention behavior are significantly positively correlated ($r = .321$, $p = .001$). However, the interaction effect is not a significant predictor of COVID-19 prevention behavior ($\beta = .061$, $p = .27$). Thus, the answer to Research Question 5 is no; the interaction effects of resistance to persuasion and traditional media perception is not a significant predictor for either COVID-19 prevention attitudes or behavior.

Social Media Perception

H7 postulates that people who perceive social media more positively will be less likely to adhere to COVID-19 prevention measures. H7-1 postulates that people who perceive social media more positively will exhibit more negative attitudes toward COVID-19 prevention protocol. Social media perception and COVID-19 prevention attitudes are positively correlated ($r = .299$, $p = .001$). Social media perception is not a significant predictor of COVID-19 prevention attitudes ($\beta = -.025$, $p = .65$), which does not support H7-1. H7-2 postulates that people who perceive social media more positively will follow fewer COVID-19 prevention protocols. Social media perception and COVID-19 prevention behavior are not significantly correlated ($r = -.042$,

$p = .21$). However, social media perception is a significant negative predictor of COVID-19 prevention behavior ($\beta = -.261, p < .001$). This offers support for H7-2. The lack of support for H7-1 and support for H7-2 shows that H7 is partially supported; social media perception is positively related to COVID-19 prevention attitudes, not negatively, and is not a significant predictor of COVID-19 prevention attitudes. However, it is a significant negative predictor of COVID-19 prevention behavior.

RQ5 asks "does resistance to persuasion significantly affect the relationship between social media perception during the COVID-19 pandemic and adherence to COVID-19 prevention measures?" To answer this question, the interaction effects of resistance to persuasion upon the relationship between social media perception and COVID-19 prevention attitudes and behavior were analyzed. The interaction of resistance to persuasion and social media perception is negatively correlated with COVID-19 prevention attitudes ($r = -.121, p = .01$). However, the interaction between resistance to persuasion and social media perception is not significantly related to COVID-19 prevention attitudes. ($\beta = .013, p = .80$). The interaction effect of resistance to persuasion and social media perception and COVID-19 prevention behavior is not significantly correlated ($r = .041, p = .22$). The interaction between resistance to persuasion and social media perception is not a significant predictor of COVID-19 prevention behavior ($\beta = .09$, $p = .09$). Thus, the answer to Research Question 6 is no.

Social Media Usage

To analyze social media usage, two separate variables were of interest: times check, which is how many times respondents checked social media the previous day, and social time, which is how much time (in minutes) the respondent had spent on social media the previous day. H8 postulates that people who use social media more frequently will be more resistant to

COVID-19 prevention measures. H8-1 postulates that people who use social media more frequently will exhibit more negative attitudes toward COVID-19 prevention protocols. Times check and COVID-19 prevention attitudes are significantly positively correlated ($r = .121$, $p = .01$). This does not support H8-1 since the relationship is in the opposite direction of what the hypothesis predicted. For the times check variable, it is not a significant positive predictor of COVID-19 prevention attitudes ($\beta = .041$, $p = .36$), which does not offer support for H8-1. Social time and COVID-19 prevention attitudes are also significantly positively related ($r = .109$, $p = .02$). This does not offer support for H8-1 since the relationship is in the opposite direction of what was predicted. Social time is not a significant positive predictor of COVID-19 prevention attitudes ($\beta = -.025$, $p = .59$), which does not support H8-1. Since both the times check and social time variables are not significant predictors for COVID-19 prevention attitudes, H8-1 is thus not supported. H8-2 postulates that people who use social media more frequently will follow fewer COVID-19 prevention protocols. There is a significant positive correlation between times check and COVID-19 prevention attitudes ($r = .121$, $p = .01$). For times check, there is no significant relationship between that and COVID-19 prevention behavior ($\beta = .041$, $p = .36$), thus offering no support for H8-2. Social time and COVID-19 prevention behavior are not significantly correlated ($r = -.022$, $p = .33$). For social time, there is also not a significant relationship between that and COVID-19 prevention behavior ($\beta = -.053$, $p = .29$), thus offering no support for H8-2. Since neither H8-1 nor H8-2 are supported, it cannot be concluded that H8 should be supported.

RQ6 asks "does resistance to persuasion significantly affect the relationship between social media usage and adherence to COVID-19 prevention measures?" To answer this question, the interaction effects of resistance to persuasion upon the relationship between social media usage and COVID-19 prevention attitudes and behavior can be analyzed. The interaction of

resistance to persuasion and times check with COVID-19 prevention attitudes are not significantly correlated ($r = .054, p = .15$). The interaction effect between resistance to persuasion and times check is a significant positive predictor of COVID-19 prevention attitudes ($\beta = .145, p = .001$), offering support for RQ8. The interaction effect of resistance to persuasion and social time is not significantly correlated with COVID-19 prevention attitudes ($r = -.021, p = .34$). The interaction effect between resistance to persuasion and social time is not a significant predictor of COVID-19 prevention attitudes ($\beta = -.012, p = .81$). For COVID-19 behavior, it is significantly positively correlated with the interaction between resistance to persuasion and times check ($r = .101, p = .02$). The interaction between resistance to persuasion and times check is a significant predictor of COVID-19 prevention behavior ($\beta = .162, p < .001$), offering support for RQ8. The interaction between resistance to persuasion and social time is not significantly correlated with COVID-19 prevention behavior ($r = .004, p = .47$). The interaction between resistance to persuasion and social time is not a significant predictor of COVID-19 behavior ($\beta = -.069, p = .18$). Thus, the answer to RQ8 is partially; the interaction between resistance to persuasion and times check is a positive predictor of both COVID-19 prevention attitudes and behavior. The results do not offer support for resistance to persuasion having an effect on the relationship between social time and COVID-19 prevention attitudes and behavior.

DISCUSSION AND CONCLUSIONS

This study sought contribute to the existing literature a holistic view of why people might be resistant to COVID-19 prevention measures. To accomplish this, the relationship between the independent variables – individualism/collectivism, uncertainty avoidance, political ideology, traditional media perception, social media perception, and social media usage – and the dependent variables, COVID-19 prevention attitudes and behavior, was analyzed. The interactions between resistance to persuasion and COVID-19 prevention attitudes and behavior was also analyzed. This study employed a survey questionnaire to gain insight into respondent's levels of resistance to persuasion, individualism/collectivism, uncertainty avoidance, political ideology, traditional media perception, social media perception, social media usage, and demographics, as well as their COVID-19 prevention attitudes and behavior. Multiple regression analyses were then used to analyze and compare the data.

The results show that some of the independent variables, collectivism, uncertainty avoidance, political ideology, traditional media perception, social media perception, social media times check, and time spend on social media, are significantly correlated with COVID-19 prevention attitudes. The demographic variables age, education level, and region are also significantly correlated with COVID-19 prevention attitudes. Collectivism, uncertainty avoidance, political ideology, and traditional media perception are also significantly correlated with COVID-19 prevention behavior. Additionally, the demographic variable gender is correlated with COVID-19 prevention behavior. The interaction effects of resistance to

persuasion and the independent variables with COVID-19 prevention attitudes and behavior was also analyzed. The interaction of resistance to persuasion and collectivism is a significant predictor of COVID-19 prevention attitudes, but not behavior. The interaction between resistance to persuasion and political ideology is a significant predictor of COVID-19 prevention attitudes and behavior. For social media usage, the interaction between resistance to persuasion and times check is a significant predictor of COVID-19 prevention attitudes and behavior, but the interaction between resistance to persuasion and social time is not a significant predictor of COVID-19 attitudes or behavior.

Resistance to Persuasion

The first two hypotheses postulated that resistance to persuasion would be negatively related to COVID-19 prevention attitudes and behavior. A linear regression was run to see if resistance to persuasion significantly affects COVID-19 prevention attitudes and behavior. This was not supported, as the linear regressions were not significant. This finding is interesting because it was expected that there would be a significant negative relationship between resistance to persuasion and COVID-19 compliance. This finding could be due to the over-exposure of negative news throughout the pandemic, especially in the beginning when news outlets were reporting hourly death counts. This could have scared people more than the average persuasive message, which could have an impact on how resistant one is to the persuasive message. The Health Belief Model dictates that people take into account the perceived threat, perceived benefits, perceived barriers, cues to action, and self-efficacy when assessing whether or not to take a preventative health action (Boslaugh, 2019). This could have also impacted people's resistance to persuasion because the factors that go into the decision to take up preventative health measures may become more important than resisting the persuasive message

if the message is regarding a health decision. Given that there is no significant relationship between resistance to persuasion and COVID-19 attitudes or COVID-19 prevention behavior, H1 and H2 could not be supported. However, the interaction effects of the resistance to persuasion and the independent variables were also examined, so resistance to persuasion could still have a significant effect on COVID-19 prevention attitudes and behavior in that way.

People's individual levels of resistance to persuasion could have been influenced by their persuasion knowledge. According to the Persuasion Knowledge Model (PKM), people develop persuasion knowledge, or personal knowledge about the tactics used in persuasion attempts, over the course of their lifetimes (Friestad & Wright, 1994). This persuasion knowledge may have had an effect on one's resistance to persuasion by making them less susceptible to usual persuasion techniques, as they have developed techniques to evade those persuasion attempts. If one of those techniques fails, another can come in its place to continue the resistance (Ahluwalia, 2000). Resistance techniques can also be used in tandem to resist persuasion attempts (Ahluwalia, 2000). Given that there is no way no know one's personal techniques for resisting persuasion in this context, we can only assume that some of these resistance techniques played a role in people's resistance to persuasion regarding COVID-19 attitudes and COVID-19 prevention behavior. Ahluwalia's (2000) study also found that people who are strongly committed to their beliefs will typically double-down in the face of refuting or negative information, and compartmentalize the negative information they receive, which appears to be a strong show of resistance. This can be applied to one's resistance to COVID-19 prevention guidelines because those that are most strongly committed to not adhering to COVID-19 prevention measures will be able to compartmentalize any refuting information they receive, so that they continue to

neglect COVID-19 prevention guidelines, putting themselves and others at higher risk of catching the virus.

Individualism/Collectivism

The first research question focused on the effect of resistance to persuasion on individualism/collectivism regarding COVID-19 prevention measures. Based on the linear regression analysis, resistance to persuasion does significantly affect the relationship between individualism/collectivism and COVID-19 prevention measures, but only on the attitudinal dimension. The results indicate that the interaction between resistance to persuasion and collectivism is not a significant predictor of COVID-19 prevention behavior. H3, which postulates that people higher in collectivism will be less resistant to COVID-19 prevention measures, was supported by H3-1 and H3-2, which postulate that people higher in collectivism will exhibit more positive attitudes toward COVID-19 prevention protocol, and that people higher in collectivism will follow more COVID-19 prevention protocols. These results imply that while resistance to persuasion does not directly affect COVID-19 attitudes and prevention behavior on its own, it does affect the relationship between collectivism and COVID-19 prevention attitudes. Linear regressions found a positive relationship between collectivism and COVID-19 attitudes and prevention behavior, meaning that as collectivism increases, so does COVID-19 prevention attitudes and behavior. This means that the more collectivist a person is, the more likely they are to exhibit positive attitudes toward COVID-19 prevention guidance, and the more likely they are to adhere to that guidance.

It has been suggested that one's levels of collectivism significantly affects their COVID-19 attitudes and prevention behavior. Collectivism simply refers to how integrated into groups a society is (Hofstede, 2011). The more collectivist a society is, the more integrated into groups its

population is. This is important to COVID-19 research because more collectivist societies are more likely to adhere to COVID-19 prevention guidelines for the good of the group, whereas more individualist societies might not adhere to prevention guidelines because the population does not see the personal benefit of doing so. Hofstede studied collectivism at the societal level, but this present study sought to study collectivism on a more individual level. Vandello and Cohen (1999) conducted a study on individualism and collectivism throughout the United States, which is considered a very individualist country, and found large variations between the regions of the United States. For example, the Deep South is very collectivist, while the Plains and Mountain West are very individualist (Vandello & Cohen, 1999). This shows that there are individual differences in people across the United States, which is what this study sought to measure. The results show that one's levels of collectivism does significantly affect their attitudes toward COVID-19 prevention measures, as well as their COVID-19 prevention behavior. This implies that collectivism is a powerful tool when a society is faced with a mass crisis event, such as the COVID-19 pandemic.

Uncertainty Avoidance

The second research question focused on the effect of resistance to persuasion on the relationship between uncertainty avoidance and COVID-19 prevention measures. To answer this question, we looked at the linear regression analysis, which showed no relationship between the interaction of resistance to persuasion and uncertainty avoidance with COVID-19 prevention attitudes or behavior. However, the main effects of uncertainty avoidance and COVID-19 prevention attitudes and behavior is significant. H4-1 and H4-2 were both supported by the analysis, which offers support for H4, which postulates that people higher in uncertainty avoidance will be less resistant to COVID-19 prevention measures. This was shown by the

results of the linear regression, which indicate that uncertainty avoidance is a positive predictor of COVID-19 prevention attitudes and behavior.

Uncertainty avoidance is another of Hofstede's dimensions for assessing cultures and refers to how comfortable a society is with unstructured situations (Hofstede, 2011). Given the novel nature of COVID-19, it was a very unstructured situation, especially in the beginning when people were receiving contradictory information from seemingly reputable outlets (Pazzanese, 2020). In the United States, some people were very uncomfortable with the situation and went into complete lockdown mode, but others were more relaxed about the situation, calling it "nothing more than the flu (Ramos, 2022)." This shows a difference in individual levels of uncertainty avoidance, which is what this study sought to measure.

Uncertainty avoidance is a psychological process people experience every day and is made up of two motivations: epistemic avoidance, or avoidance related to knowledge, and exclusive identity, or one's need to have a unique identity (Gründl & Aichholzer, 2020). While Hofstede (2011) studied uncertainty avoidance on the cultural level, Gründl & Aichholzer (2020) studied it on the individual level. They describe uncertainty avoidance as "deep-rooted individual differences in people's need for certainty. Uncertainty avoidance is also referred to as intolerance of uncertainty or ambiguity, the need to manage uncertainty, such as the need for cognitive closure, the need for order or low openness to experience and familiarity, preference for structure and repetitive tasks, and preference for simplicity and decisiveness in contrast to extended rumination (Gründl & Aichholzer, 2020)." If people are receiving confusing or contradictory information regarding COVID-19, they are likely to stick to the simplest explanation that provides cognitive closure. And, since scientific guidance changed as the scientists learned more about COVID-19, people were told different information, often by the same organization,

leading to mistrust in those organizations. An example would be people's response to masking. In the beginning of the pandemic, people were told explicitly to not wear masks because there was a shortage of masks for healthcare workers, and the masks needed to be saved for them. The surgeon general went to far as to say in a since-deleted tweet that masks "are NOT effective in preventing the general public from catching #coronavirus, but if healthcare providers can't get them to care for sick patients, it puts them and our communities at risk! (Netburn, 2021)." It wasn't until July 14, 2020 that the CDC recognized that people should be wearing masks, and it wasn't until January 20, 2021 that President Biden signed an executive order requiring masks in federal buildings, on federal land, and for government contractors (Netburn, 2021). The next day, Biden signed an executive order aimed at masking during travel, requiring masks on public transportation, including airplanes, buses, and subways (Netburn, 2021). This contradictory information could have led to distrust in the CDC and Biden administration as they went against what they had said previously, leading to people deciding to not wear a mask or getting angry about having to wear a mask when it has been required (Taylor & Asmundson, 2021). This could be due to a phenomenon supported by Merkin (2006), in which people strong in uncertainty avoidance will "filter out the senders' message and focus on reducing uncertainty instead of listening to others' messages (Merkin, 2006)." This means that people high in uncertainty avoidance are less likely to listen to the sender's message, and instead focus on reducing uncertainty. This applies to COVID-19 prevention protocol because people have been inundated with messages about what they should or should not be doing to protect themselves and others from the virus, and those high in uncertainty avoidance will be less likely to hear those messages, even though they are the ones that the sender is trying to communicate with. However, not everyone high in uncertainty avoidance is likely to neglect COVID-19 prevention protocol.

There are many factors that go into choosing to comply with COVID-19 prevention guidelines, and uncertainty avoidance is just one factor. However, the results of this study show that people higher in uncertainty avoidance are more likely to adhere to attitudinal and behavioral COVID-19 prevention protocol. This is probably due to people's need for cognitive closure and wanting to get information from trusted sources rather than social media or another less-reputable source.

Political Ideology

The third research question focuses on the effect of resistance to persuasion on the relationship between political ideology and COVID-19 prevention attitudes and behavior. This was of interest because of the politicization of the COVID-19 pandemic, which could lead to one party adhering to prevention measures more often than the other party (Stroebe, et al., 2021). To answer RQ4, the linear regressions were analyzed. The results show that the interaction between resistance to persuasion and political ideology is a significant negative predictor of COVID-19 attitudes and behavior. Thus, the answer to RQ4 is yes. This shows that resistance to persuasion can affect one's attitudes and actions along with their political ideology. The main effects of political ideology and COVID-19 prevention attitudes and behaviors was also significant in a negative direction, offering support for H5, which postulates that people who identify as more Conservative (than Liberal) will be more resistant to COVID-19 prevention measures. This finding is interesting because the pandemic was politicized, mostly by powerful Conservative figures who would downplay the virus and go directly against public health recommendations (Shabad, 2021). A portion of Conservatives in the general population listened to their leaders, and neglected to take up prevention measures, and in extreme cases, acknowledge the existence of the virus at all (Stroebe, et al., 2021). Stroebe, et al. (2021) found that Conservatives were less likely to adhere to public health recommendations and mandates regarding COVID-19 than

Liberals, which is consistent with the findings of this study. It is not consistent, however, with the Health Belief Model, which "uses information about an individual's values and expectations to examine why some individuals take advantage of health programs or alter their behavior to improve their health and others do not (Boslaugh, 2019)." The Health Belief Model consists of five components: perceived threat, perceived benefits, perceived barriers, cues to action, and self-efficacy (Boslaugh, 2019). Boslaugh (2019) found that Conservatives are generally more health-conscious than Liberals, so the question remains, why were Conservatives less likely to take up public health measures regarding COVID-19? As stated before, one's incentives to adhere to COVID-19 prevention measures can vary, but political ideology seems to be a strong predictor for COVID-19 prevention attitudes and behavior.

Traditional Media Perception

The fourth research question focuses on the effect of resistance to persuasion upon the relationship between one's perception of COVID-19 media coverage from traditional outlets and their willingness to adhere to COVID-19 prevention guidelines. Traditional media outlets include television, radio, and newspapers. To answer this question, the linear regressions were analyzed. The results showed that the interaction effects of resistance to persuasion and traditional media perception is not a significant predictor of COVID-19 attitudes or behavior. However, the results did show support for H6, which postulates that people who perceive traditional media more positively will be less resistant to COVID-19 prevention measures. The linear regressions showed that the main effects between traditional media perception and COVID-19 prevention attitudes and behavior are significant; the variables are positively correlated. This means that as traditional media perception increases (becomes more positive), COVID-19 prevention attitudes and behavior also increases. This implies that people who rely on traditional media and perceive

it positively will be more inclined to take up COVID-19 prevention measures. This could potentially apply to other future mass crises and shows that traditional media can be a reliable source for information regarding prevention guidelines during the COVID-19 pandemic. However, the reliability of this information varied by news source. A study conducted by Jurkowitz & Mitchell (2020) looked into the differences in COVID-19 information between CNN, MSNBC and Fox News. They found that people who indicated they mostly watch MSNBC were more likely to have correct information than Fox News viewers (Jurkowitz & Mitchell, 2020). This is due to the spread of misinformation on Fox News regarding the COVID-19 pandemic (Bump, 2021). This shows that the information source is important regarding traditional media because not all sources are credible. In addition to the spread of misinformation, another issue that can stem from traditional media is agenda setting. Agenda setting occurs when "the media implicitly shape public opinion on the issues they cover, and, as a result, influence public attitudes and behaviors (Buturoiu & Voloc, 2021)." During the beginning of the COVID-19 pandemic, traditional media outlets inundated users with information about the pandemic, from preventative measures to current death tolls. While it is necessary to impart this information upon the public, overexposure to this type of negative information can be detrimental to mental health (Olagoke, et al., 2020). This shows that it is important to stay informed, but it is also important to be cognizant of the potential negative effects of too much negative information. Taken with the results of the present study, this implies that traditional media is a good source for information but should not be used in overwhelming amounts.

Social Media Perception

The fifth research question sought to explore the effect of resistance to persuasion upon the relationship between social media perception and COVID-19 prevention attitudes and behavior. To answer this question, the linear regressions were analyzed. The interaction between resistance to persuasion and social media perception is not a significant predictor of COVID-19 prevention attitudes or behavior, thus making the answer to RQ5 no. It was hypothesized that social media perception would be negatively related to COVID-19 prevention attitudes and behavior, but that was only partially supported as social media perception and COVID-19 attitudes are positively correlated, not negatively, but social media perception is a significant negative predictor of COVID-19 behavior. These findings contradict the findings of other studies (Cuello-Garcia, et al., 2020), which found that "the use of social media as a source of information about COVID-19 has been correlated with stronger beliefs in conspiracy theories and with less-protective behaviors during the pandemic." This is contradictory because the results of the present study show that social media perception is not a significant predictor of COVID-19 prevention attitudes. This could be due to the way that social media perception was assessed compared to Cuello-Garcia, et al.'s study, or that those surveyed were getting their information from more reliable sources, even if it was on social media. However, another study found that journalists were criticized for "causing unnecessary panic, promoting risky behavior, displaying negative sentiments, spreading misinformation, and generating a lack of trust among different groups in society (Mellado, et al., 2021)." Journalists are typically seen as credible sources for information, but the COVID-19 pandemic showed that not all journalists have the public's best interest at heart. "Medical professionals and health specialists, academics, and government authorities and politicians continue to be the most important voices in news

coverage," meaning that those sources are seen as more trustworthy than other news sources (Mellado, et al., 2021). It was vital that these sources be able to effectively communicate with the public, but their advice would often be at odds with one another, leading to confusion among the public. The results of the present study show that social media perception can be a tool used in future pandemics or crises, as those who perceive social media more positively are more likely to perceive COVID-19 prevention more positively. Further implications are that social media can be used to quickly disseminate valuable information regarding a public health emergency. It is incumbent upon the doctors, academics, and politicians continue to be trusted news sources across all platforms, and to provide the public with true and accurate information.

Social Media Usage

The sixth research question focuses on the relationship between social media usage and resistance to persuasion regarding COVID-19 prevention measures. Social media usage is made up of two variables: social time, which measures how much time the respondent spends on social media, and times check, which measures how many times the respondent checks social media. To answer this research question, the linear regressions were analyzed. The results show that interaction between resistance to persuasion and times check is a positive predictor of COVID-19 prevention attitudes and behavior, but social time is not a significant predictor of either COVID-19 prevention attitudes or behavior. This means that as times checking social media increases, so does COVID-19 prevention attitudes and behavior. These findings do not support Hypothesis 9, which posits that those who use social media more frequently will be more resistant to COVID-19 prevention measures. In fact, the results show a correlation in the opposite direction for times check and prevention attitudes and behavior. This is in line with the prior results of this study regarding social media perception in that those who use social media

are not more likely to be resistant to COVID-19 prevention measures. There are over 4.2 billion active social media users across the world, so being able to use this tool effectively is essential (We Are Social, 2021 Jan. 17). McFarland & Ployhart (2015) laid out a contextual framework for social media, consisting of eight discrete ambient stimuli that distinguish social media from physical, non-digital contexts: physicality, accessibility, latency, interdependence, synchronicity, permanence, verifiability, and anonymity. These eight ambient stimuli work together to create the social media landscape that is used today. It is important to understand how these stimuli work together in order to fully understand the social media landscape, and to be able to use it most effectively as a communication tool. The results of the present study show that there is a significant relationship between times checking social media and COVID-19 prevention attitudes and behavior. In that case, there is a positive correlation, meaning that as the number of times one checks social media increases, their attitudes toward prevention measures and adherence to those measures also increases. This is an important finding because it shows that social media can be a tool used to increase prevention attitudes and behavior in a future public health crisis. This, combined with the findings of Mellado, et al. (2021), which found that doctors, academics, and politicians are the most trustworthy sources, gives future public health communicators an idea of how to communicate with the public on social media regarding health information. The results show that the most effective way to get information out to the public on social media is to use a trustworthy source and focus on improving prevention attitudes and behavioral recommendations.

LIMITATIONS AND FUTURE DIRECTIONS

As with any study, there are limitations to the present study. First, not every possible reason that one would choose to not adhere to COVID-19 prevention guidelines could be studied. While a number of possible variables were covered, there are still more reasons that one might choose to not comply with prevention guidelines. A related limitation is that the present study lacked a theoretical basis when choosing the variables to be studied. The variables were chosen because past literature had emphasized them in previous studies, but the variables were not chosen based off of any existing theory. Another limitation is that the sampling method was not completely random as it was only possible to sample people who had signed up with Amazon mTurk and were matched with our survey. Recruiting through Amazon mTurk led to a more representative sample than recruiting through the university, but it is still not a perfect recruitment method. A limitation regarding the survey itself is that it is not a validated measure. The political ideology measure specifically is not validated, as it is just a scale question. Another possible issue regarding the survey is that asking people to self-report their adherence to COVID-19 prevention protocols could have led to respondents lying about how often they follow protocol to make themselves look better to the researchers, even though the survey was anonymous. This could be due to a variety of factors, most of which that have been researched focus on social acceptance and identity theory (Brenner & DeLamater, 2016).

Despite these limitations, this study provided important insights into how people receive public health messages, and what methods could be used in the future to avoid resistance to

persuasion regarding public health measures. The results regarding resistance to persuasion imply that people are not significantly resistant to persuasion regarding COVID-19 prevention protocols, but that does not mean that resistance to persuasion does not play an important role in public health messaging. Past studies have found that people have a litany of resistance methods at their disposal, and they can use any combination of those methods to resist a persuasive message.

Future research should focus on other public health crises, or other types of emergencies in which the public is entirely affected, as was the case during the COVID-19 pandemic. Future studies could continue to explore the moderating effect of resistance to persuasion on other factors that might contribute to one's unwillingness to adhere to public health measures, or other measures put in place by the government or other relevant authorities. Future research could also look at other variables that were unable to be covered in the present study. There are many factors that could contribute to one's unwillingness to adhere to public health guidelines, and all of those factors deserve to be explored so that people in power and the public have tools to fight these types of public emergencies. Future research could also continue to explore the relationship between social media and adherence to these types of guidelines, as the social media landscape is constantly changing. The results of this study sometimes contradicted the results of past studies regarding social media and adherence to COVID-19 prevention guidelines, so future research could either support or not support the results of this present study. Future studies could also continue to explore the relationship between individualism/collectivism and attitudes and behavior. There has been research done on horizontal and vertical scales of individualism/collectivism, but those scales were not included in the present study for brevity's sake in the survey questionnaire (Triandis & Gelfand, 1998; Singeles, et al., 1995). Future

studies could include the horizontal and vertical aspects of individualism/collectivism in their survey questionnaire in order to be able to dig deeper into the data surrounding individualism/collectivism.

This study contributes to the theoretical basis of resistance to persuasion in that it showed that resistance to persuasion can sometimes be circumvented during times of crisis, where people are more likely to follow a persuasive message regarding public health guidelines because they want to protect themselves and others. This was supported by the results that showed that there is no significant relationship between resistance to persuasion and adherence to COVID-19 prevention guidelines. These findings could be of interest to future researchers to attempt to replicate the findings and see what their analysis is. The results did also show that resistance to persuasion is a significant moderating variable in the relationship between the chosen independent variables and adherence to COVID-19 prevention guidelines. This could be further explored by future researchers who are studying resistance to persuasion to see how it affects other types of persuasive messaging.

The practical implications of this study have to do with messaging during a public health crisis such as COVID-19. The findings show that there are many factors that contribute to one's decision to adhere to public health measures, not all of which could be examined in this study. However, the results show that resistance to persuasion significantly affects the relationship between the independent variables individualism/collectivism, uncertainty avoidance, political ideology, and traditional media perception, and the dependent variables COVID-19 attitudinal and behavioral compliance. Resistance to persuasion significantly affected the relationship between social media perception and social media times check, and the dependent variable COVID-19 attitudinal compliance. This implies that while resistance to persuasion was not

significantly related to COVID-19 attitudinal and behavioral compliance on its own, it is a significant moderating variable in the relationship between the chosen independent variables and COVID-19 attitudinal and behavioral compliance. These findings could be further explored in future research, to see if resistance to persuasion significantly affects any other factors that may contribute to one's adherence to public health guidelines that could not be represented in this present study. The COVID-19 pandemic offered valuable data regarding people's resistance to persuasion, and those relationships could be further explored as the pandemic has moved into a new phase where public health guidelines have almost completely gone away, but the virus is still spreading and mutating.

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APPENDIX A: SURVEY QUESTIONNAIRE

I. Individualism vs. Collectivism

a. Please indicate the extent to which you agree with each statement.

5-point Likert scale (1 = strongly disagree, 5 = strongly agree)

i. Individuals should sacrifice self-interest for the group.

ii. Individuals should stick with the group even through difficulties.

iii. Group welfare is more important than individual rewards.

iv. Group success is more important than individual success.

v. Individuals should only pursue their goals after considering the welfare of the group.

vi. Group loyalty should be encouraged even if individual goals suffer.

II. Uncertainty Avoidance

a. Please indicate the extent to which you agree with each statement.

5-point Likert scale (1 = strongly disagree, 5 = strongly agree)

i. I prefer structured to unstructured situations.

ii. I prefer specific instructions to broad guidelines.

iii. I tend to get anxious easily when I don't know an outcome.

iv. I feel stressed when I cannot predict consequences.

v. I would not take risks when an outcome cannot be predicted

vi. I believe that rules should not be broken for mere pragmatic reasons.

vii. I don't like ambiguous situations.

III. Social Media Usage

a. Yesterday, how much total time did you spend on the Internet while using a desktop, laptop, smartphone, or tablet computer?

   i. Fill-in-the-blank

b. Yesterday, about how many times did you use a desktop, laptop, smartphone, or tablet computer to check a social media website or application? (i.e., Facebook, Twitter, Instagram, Snapchat, TikTok, etc.)

   i. 0-10 times

   ii. 11-20 times

   iii. 21-30 times

   iv. 31-40 times

   v. 41-50 times

   vi. 50+ times

c. Yesterday, about how much total time did you spend on a desktop, laptop, smartphone, or tablet computer using social media websites or applications?

   i. Fill-in-the-blank

d. What is your main source for news?

   i. TV/Cable news

   ii. Twitter

   iii. Facebook

   iv. Instagram

v. Radio

vi. Newspaper or online newspaper

vii. Podcasts

viii. Other [fill in the blank]

IV. Resistance to Persuasion

a. The next few questions will ask your opinion regarding COVID-19 protocol, such as mask usage, social distancing, stay-at-home orders, and vaccination recommendations.

As vaccines have become more widely available, the CDC published updated protocol recommendations. Currently, they recommend that all Americans above the age of 12 receive one of the three FDA approved vaccines. They also recommend that vaccinated people: wear a mask in public places in areas of high transmission, or around people who are unvaccinated; get tested if they are experiencing COVID-19 symptoms; get tested 5-7 days after coming into contact with someone with COVID-19; wear a mask indoors in public for 14 days after exposure or until negative test result; isolate for 10 days if they test positive for COVID-19; and follow any federal, state, local, tribal, or territorial laws, rules, and regulations. Those who remain unvaccinated should wear a mask in public at all times, and follow the same rules for testing and infection.

b. Please indicate the extent to which you agree with the following statements.

5-point Likert scale (1 = strongly disagree, 5 = strongly agree)

i. I am strongly committed to my own beliefs regarding COVID-19 protocols.

ii. My own beliefs about COVID-19 protocols are very clear.

iii. I find my opinions about COVID-19 protocol to be changeable.

iv. I often vary or alter my views when I discover new information about COVID-19 protocol.

v. My ideas about COVID-19 protocols have been very stable and remain the same over time.

vi. I have never changed the way I see COVID-19 protocol.

vii. My opinions around COVID-19 protocol have fluctuated a lot.

viii. If it is necessary, I can easily alter my beliefs around COVID-19 protocol.

ix. I have often changed my opinions about COVID-19 protocol.

V. COVID-19 Compliance

a. Have you received the COVID-19 vaccine?

i. Yes

ii. No

iii. Prefer not to answer

b. Have you received a COVID-19 vaccine booster?

i. Yes

ii. No

iii. Prefer not to answer

c. Do you personally know anyone who contracted COVID-19?

i. Yes

ii. No

VI. COVID-19 Risk Assessment

Please indicate the extent to which you agree with each statement.

5-point Likert scale (1 = strongly disagree, 5 = strongly agree)

a. I am less likely than most people to get COVID-19.

b. I am not at risk for getting infected with COVID-19.

c. My body could fight off COVID-19 infection.

d. People like me don't get COVID-19.

e. There is little chance that I could get or spread COVID-19 from what I do in my everyday life.

f. Contracting COVID-19 would be disruptive to my physical health.

g. Contracting COVID-19 would be disruptive to my social life.

h. Contracting COVID-19 would be disruptive to my everyday life.

i. Contracting COVID-19 would be disruptive to my life overall.

VII. COVID-19 Attitudinal Compliance

a. When thinking about these answers, please assess your thoughts and behaviors throughout the COVID-19 pandemic over the past 18 months.

   5-point Likert Scale (1 = strongly disagree, 5 = strongly agree)

b. Managing COVID-19 is the government's job.

c. Government officials have effectively managed COVID-19.

d. Everyone should have followed official recommendations regarding health precautions against COVID-19.

e. I have expressed my opinions on health and safety matters even when others disagree.

f. I frequently speak up and encourage others to engage in safe and healthy behavior.

g. I help others take the correct actions to remain healthy and safe.

h. I often make health- and safety-related recommendations about various activities.

i. Taking care of my health means a lot to me.

j. My health is my top priority.

VIII. COVID-19 Behavioral Compliance

Please indicate the extent to which you agree with each statement.

5-point Likert Scale

a. I have been concerned about my health and have taken active precautions against COVID-19.

b. During periods of lockdown, I followed the rules for sheltering in place.

c. I have chosen not to visit friends and family when it was recommended.

d. I have practiced social distancing to avoid COVID-19.

e. I have stayed at home to avoid COVID-19.

f. I have washed my hands more frequently to avoid COVID-19.

g. I have worn a mask to avoid COVID-19.

h. I have explained to others how to be healthy and safe.

IX. Traditional Media Coverage

a. On a five-point scale, please indicate how you have felt generally about the media coverage of the COVID-19 pandemic from mainstream media outlets (e.g., television news, newspaper, radio)

    i. Unsophisticated : Sophisticated

ii. Dishonest : Honest

iii. Insincere : Sincere

iv. Old-fashioned : Modern

v. Unfriendly : Friendly

vi. Angry : Calm

vii. Disgusted : Content

viii. Resentful : Pleasant

ix. Biased : Unbiased

X. Social Media Coverage

a. On a five-point scale, please indicate how you have felt generally about the media coverage of the COVID-19 pandemic from social media (e.g., Facebook, Instagram, Twitter, Snapchat, TikTok)

i. Unsophisticated : Sophisticated

ii. Dishonest : Honest

iii. Insincere : Sincere

iv. Old-fashioned : Modern

v. Unfriendly : Friendly

vi. Angry : Calm

vii. Disgusted : Content

viii. Resentful : Pleasant

ix. Biased : Unbiased

XI. Demographics

a. Which age group do you fall into?

i. Under 18

ii. 18-24 years old

iii. 25-34 years old

iv. 35-44 years old

v. 45-54 years old

vi. 55-64 years old

vii. 65+ years old

b. Which of these best describes your gender identity?

i. Male

ii. Female

iii. Non-binary/third gender

iv. Transgender- masculine

v. Transgender- feminine

vi. Prefer to self-describe: [fill in the blank]

vii. Prefer not to say

c. What is the highest level of education you have completed?

i. Less than high school

ii. High school graduate

iii. Some college

iv. 2 year degree

v. 4 year degree

vi. Professional degree

vii. Doctorate

d. Which of the following best describes your race? Check multiple boxes if necessary.
    i. White
    ii. Black or African American
    iii. American Indian or Alaska Native
    iv. Asian
    v. Native Hawaiian or Pacific Islander
    vi. Other: [fill in the blank]
e. What state do you live in?
    i. Dropdown choice
f. On an 11-point scale, where would you place your own political ideology
    i. Very liberal : Very conservative
g. Are you or either of your parents first-generation immigrants?
    i. Yes
    ii. No
    iii. Skip to: What country did you or they immigrate from?
h. What country did you or they immigrate from?
    i. Fill in the blank
    ii. Only display this question if answer to previous question is Yes

APPENDIX B: IRB APPROVAL LETTER

THE UNIVERSITY OF ALABAMA® | Research & Economic Development
Office for Research Compliance

December 20, 2021

Savannah Kelly
Department of Advertising & Public Relations
College of Communication & Information Sciences
The University of Alabama
Box 870172

Re: IRB # 21-09-5015: "Comparing COVID-19 Prevention Public Health Measure Compliance as a Function of Individualism/Collectivism and Political Ideology"

Dear Ms. Kelly,

The University of Alabama Institutional Review Board has granted approval for your proposed research. Your application has been given exempt approval according to 45 CFR part 46. Approval has been given under exempt review category 2 as outlined below:

(2) Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording) if at least one of the following criteria is met:

(i) The information obtained is recorded by the investigator in such a manner that the identity of the human subjects cannot readily be ascertained, directly or through identifiers linked to the subjects

The approval for your application will lapse on December 19, 2022. If your research will continue beyond this date, please submit the annual report to the IRB as required by the University policy before the lapse. Please note, any modifications made in research design, methodology, or procedures must be submitted to and approved by the IRB before implementation. Please submit a final report form when the study is complete.

Please use reproductions of the IRB approved informed consent form to obtain consent from your participants.

Sincerely,

[redacted]

Carpantato T. Myles, MSM, CIM, CIP
Director & Research Compliance Officer

Jessup Building | Box 870127| Tuscaloosa, AL 35487-0127 | 205-348-8461
Fax 205-348-7189| Toll Free 1-877-820-3066 | rscompliance@research.ua.edu

Informed Consent

Please read this informed consent carefully before you decide to participate in the study.

Consent Form Key Information:

- You are invited to participate in a 15-20 minute survey regarding COVID-19 prevention measures, as well as your thoughts, opinions, and behaviors generally.
- No identifying information will be collected and all responses will remain private and confidential
- You will receive a unique code to enter into Amazon mTurk at the end of the survey to be compensated for your time

Purpose of the research study:
Since March 2020, the COVID-19 pandemic has wreaked havoc across the world, bringing powerful countries to a full halt, and revealing the issues within societies that exacerbated this pandemic. Because of the nature of this pandemic, it was incumbent upon individuals to take up recommended public health measures. In some places, the adoption of these measures became a matter of political debate rather than a matter of public health and protecting the community at large. The present study aims to examine the role of political polarization and the collectivism of different places in the adoption of COVID-19 prevention measures.

What you will do in the study:
You will have selected this survey in Amazon mTurk. Upon beginning the survey, you will read this informed consent form and agree or disagree to participate in the research.

This survey will ask your opinions and behavior regarding COVID-19 prevention measures, questions to assess your level of individualism/collectivism and your level of resistance to persuasion, questions regarding your social media usage, and demographic questions. You are allowed to skip any question if it makes you uncomfortable. After completing the survey, you will be given a unique code to enter into Amazon mTurk to receive compensation for participating in the survey. After the researcher approves the survey response as complete (up to three days), you will be compensated for your time.

Time required: The study will require about 15-20 minutes of your time.

Risks: There are no anticipated risks in this study.

Benefits: There are no direct benefits to you for participating in this research study. The study may help us understand why some populations were more willing to adhere to COVID-19 prevention measures.

Confidentiality: The information that you give in the study will be handled confidentially. Your name and other information that could be used to identify you will not be collected or linked to the data. Because of the nature of the data, it may be possible to deduce your identity; however, there will be no attempt to do so and your data will be reported in a way that will not identify you.

Voluntary participation: Your participation in the study is completely voluntary.

Right to withdraw from the study: You have the right to withdraw from the study at any time without penalty.

How to withdraw from the study:
If you want to withdraw from the study, exit out of the survey. Your data will be incomplete and will therefore not be used in the final data analysis. There is no penalty for withdrawing.

Compensation/Reimbursement: Upon completion of the survey, you will receive compensation of $1.00 via Amazon mTurk. To be compensated, you must enter the unique code at the end of the survey into Amazon mTurk.

If you have questions about the study or need to report a study related issue please contact:
Name of Principal Investigator: Savannah Kelly
Title: Graduate Student
Department Name: Advertising & Public Relations
Email address: sekelly3@crimson.ua.edu

Faculty Advisor's Name: Hyoungkoo Khang
Department Name: Advertising & Public Relations
Email address: khang@apr.ua.edu

If you have questions about your rights as a participant in a research study, would like to make suggestions or file complaints and concerns about the research study, please contact:
Ms. Tanta Myles, the University of Alabama Research Compliance Officer at (205)-348-8461 or toll-free at 1-877-820-3066. You may also ask questions, make suggestions, or file complaints and concerns through the IRB Outreach Website at http://ovpred.ua.edu/research-compliance/prco/. You may email the Office for Research Compliance at rscompliance@ua.edu.

Agreement:

☐ I agree to participate in the research study described above.

☐ I do not agree to participate in the research study described above.
