DETERMINANTS OF CONSUMER INTENTION TOWARDS COVID VACCINATION THE MEDIATING ROLE OF ATTITUDE

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ABSTRACT

Covid 19 pandemic has derailed the progress made by humanity and has caused severe damage to the social and economic life of people. The only solution to prevent the loss of life has been offered in the form of vaccines. However, various countries' vaccination program has received mixed responses from the masses. With the virus refusing to subside and the threat of emergence of a new variant, and government pushing for booster dose, it becomes imperative to study the factors that shape the consumer attitude towards vaccination. The present study attempts in that direction. A detailed questionnaire was floated among five hundred respondents, out of which 404 responses were considered for the study. A theoretical model has been proposed, consisting of nine factors, out of which seven are independent variables, one is mediating variable (attitude), and the other is a dependent variable (Vaccine Intention). In addition to the previously studied factor, the study proposes three new factors: politics and policies, design of vaccination program, and introduction of new vaccines. The results indicate that social media presence, government policies, previous vaccination experience, safety and transparency in the design of vaccination programs, knowledge of vaccines, and health benefits associated with them play a significant role in shaping the consumer intention for vaccination. The mediating role of attitude was also found to be significant for the factors. The study provides significant managerial implications regarding factors that shape the consumer attitude towards vaccination.

Keywords: Covid 19, Vaccine Intention, Attitude, Consumer, Government Policy, Social Media.

INTRODUCTION

Covid 19 virus is present in most countries across the globe and has affected 178 million populations while 3 million people have succumbed to the virus. Health experts believe that collective immunity against the corona virus can be achieved by massive implementation of vaccination schemes (Feleszko et al., 2021). Thus, it becomes pertinent for countries to speed up the vaccination for the masses to save the nation's economy (Mellet & Pepper 2021). This poses a significant challenge for most of the developing countries with fragile health care system and surplus populations. Health care experts believe that at least 60-70 % of the population should be vaccinated to achieve herd immunity (Kim et al., 2021).

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However, despite the increase in efficiency and availability of vaccines, hesitancy towards vaccines remains a widespread problem across developing countries. Previous research conducted before the onset of Covid 19 has revealed growing reluctance towards vaccination schemes despite their proven effectiveness against specified diseases (Schiavo 2020; Lane et al., 2018). Several studies conducted on hesitancy towards vaccines in reference to viruses such as influenza, mumps, and measles have revealed that misinformation about vaccines is widely prevalent (Nyhan & Reifler, 2015); (Hussain et al., 2018).

India is home to a massive population of 1.39 billion people with diverse socio and economic backgrounds. Vaccinating even 70% of the population of this size is a behemoth task for any government. Apart from managing logistics hurdles, vaccine hesitancy also poses a significant challenge for government and vaccine advocacy groups. As per the survey conducted by CSS nearly 40% of the Indian population has shown reluctance towards the vaccination program (Reinhart & Tibshirani, 2020). Vaccine hesitancy has become a global problem, and it has been identified by WHO as a top ten global threats in 2019 (Lazarus et al., 2020). Though the government has set an ambitious target of vaccinating 80% of its population by December 2021, misinformation & passive attitude among the masses make this an insurmountable task. Though the free vaccination policy has taken care of financial challenges for people of weaker economic sections, but it is not sufficient to meet the requirements of demographic variability among the population. Also, certain sections of society still prefer getting vaccinated at private hospitals because of better facilities. Thus it becomes pertinent for the authorities to design some comprehensive framework that can significantly influence the behavior and attitude of the general population towards vaccination. However, such policy formulation requires an extensive clarity of the factors that significantly impact the behavior, attitude, and intention of a person.

Previous researches throughout the globe have made an effort to identify factors that influence the attitude towards vaccination policies. A study conducted among the students of Italy against their attitude towards future Covid 19 vaccination showed that multidisciplinary educational interventions helped in restoring trust towards vaccines (Serena et al. 2020). They also discovered that people involvement at multiple levels is essential for the success of vaccination programs, which could be attained by developing risk communication strategies, designing sensitizing programs, and conducting psychosocial research. In Britain (Guelmami et al. 2021) observed that vaccine hesitancy was high among the population which consumed information from social media in comparison to the population which relied more on official channels for information on the covid vaccine. They also found out that gender and mask-wearing were linked to hesitant attitudes towards covid vaccination. Similarly, other researchers have analyzed various factors which significantly impact the attitude and intention towards vaccination policies, but there is a dearth of enough research in the context of India. Being a country having one of the highest numbers of vaccine eligible populations, it is vital to conduct research to measure their intention towards vaccines. The authors in this paper have attempted to find out the crucial factors which influence the consumer attitude towards the free vaccination program of the government. In this paper a theoretical model has been proposed to predict the attitude and intention towards vaccination. The proposed model displays individuals' intention towards vaccination and informs about how Communication and Social Media Environment (CSM), Experience with Previous Vaccine (EPV), Beliefs, perception about health and prevention (BPH), Knowledge/awareness about Covid Vaccines (KA), impacts the attitude and intention of an individual towards vaccination. This paper offers a wide-scale model of vital factors and incorporates factors like Policies & Politics (PP), Introduction of a new vaccine or new

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formulation (INV), Design of vaccination program (DOV) in the existing literature. The authors have also taken an effort to answer the following questions

Q1) What are the factors which have a significant influence on the consumer attitude towards. Vaccination and which are the most influential factors.
Q2) Does Vaccine type and its efficiency has a significant effect on consumer intention.
Q3) Does social media play a significant role in shaping the attitude towards vaccination.

LITERATURE REVIEW

Previous research has revealed the prevalence of hesitancy towards vaccination among the general population (Dube et al. 2013; Mc Donald 2015; Jacobson et al. 2015; Salmon et al. 2015). A study conducted by Horne (2015); Harris (2017) found that a growing number of population were skeptical about vaccination even though there was no substantial evidence of adverse reaction due to vaccines.

Author/'s	Methodology	Study Area	Factors Identified
Mc Donald, Sage Working Group, (2015)	Demand Matrix	Canada	Vaccine Hesitancy, Hesitancy determinants
Garcia & Cerda (2020)	Multifactorial consideration	Global	Access to Vaccine, health risk, vaccine safety, socio-demographic factors
Faasse & Newby (2020)	Online Survey Method	Australia	Health Protective Behaviour, Psychological factors, demographic factors
Karlsson et al., (2021)	Linear Regression Analysis	Finland	Vaccine Safety, Infection severity,
Fridman et al., 2020	Cross-Sectional Survey	USA	Quality of Information, Trust on Information sources, Social Distancing
Puri et al., 2020, Dib et al., (2021)	Multilevel Perspective framework	Global	Communication. Social Media , Role of government officials, Misinformation, Disinformation
Lazarus et al (2021)	Regression Analysis	Global	Vaccine acceptance rates, sources of information, impact of government sources
Schwarzinger et al., (2021)	Discrete Choice Model, Behavioural Model	France	vaccine refusal, vaccine hesitancy among women
Leos - Toro et al., (2021)	Logistic Regression Model	Zurich, Switzerland	Immunization Programs. Role of Demographic Factors, Socio economic Factors on Vaccination programs
Kumar et al (2021)	Observatory Method	India	Vaccination safety and efficacy, Post Marketing surveillance, Covid Management Strategy
Harapan et al (2020)	Logistic Regression Model	Indonesia	Vaccine Efficiency, Vaccine acceptance rates, Demographic Factors, Role of Social Media
Kanabar & Bhatt (2021)	Multilevel Perspective framework	India	Vaccine Communication Interventions, Infrastructure facilities

An elaborate literature review has been undertaken to identify the factors which shape the consumer attitude towards vaccination. A summary of the factors which affect consumer attitude

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towards vaccination has been presented in Table 1. Vaccine hesitancy has caused a decline in vaccine acceptance, leading to an increase in Vaccine-preventable diseases like small pox and polio (Dube et al. 2015; Paules et al. 2019). Vaccine hesitancy was found be complex and it varies over time, place and types of vaccines (Dube et al 2015). Previous studies have found that hesitancy to take vaccines is a global problem and a wide range of factors are mentioned for refusal to take vaccines (Lane et al., 2018, Wagner et al., 2015); (Karlsson et al., 2021) in their studies established a robust link between intention to take vaccines and the perception of safety of these vaccines.

A study conducted by Loewenstein et al. (2001) revealed that vaccine attitudes and behaviors were affected by variety of situational and individual level factors like risk perception and demographic characteristics. The role of demographic factors in shaping the attitude towards vaccination was also confirmed by Kohlhammer et al. (2007). Henneman et al. (2013) & Vandermeulen et al., (2008) found out a positive correlation between socio economic status and vaccine hesitancy. Regional disparities in perceptions of vaccine safety and effectiveness are evident from earlier researches on vaccine hesitancy (Wagner et al 2019, Larson et al., 2015).

Similar trends have been found in case of Covid 19 Vaccines. In a research conducted in North Central Nigeria on knowledge, attitudes and practices towards Covid 19 acceptance level was found at only 29% which indicates low acceptancy levels of the vaccine among general population (Reuben et al., 2021). In a study conducted by Sallam et al. (2020) to study the relationship between age and gender towards vaccine, it was revealed that males have more inclination towards taking vaccines. In his study, Rhodes et al., (2020) did not find any significant relation between vaccine acceptance and cultural background. Kanabar & Bhatt (2021) in their study explored the relationship between communication interventions and vaccine hesitancy. They further revealed the importance of community groups and government channels' role in addressing the issue of vaccine hesitancy among the population. Studies conducted by Kanozia & Arya (2021) among the population of India, Pakistan, and Bangladesh have shown religion as a major factor for propagating vaccine hesitancy among the population. The population perception was further distorted due to fake news and misinformation (Arao et al., 2021).

Researchers have identified various factors which shape the consumer intention towards vaccination however factors like Vaccination policies, Introduction of New Vaccines, Design of Vaccination programs has still not been explored properly in Indian context This paper aims to fulfill the gap by exploring the relationship between these factors and attitudes towards vaccination.

Theoretical Model & Development of Hypothesis

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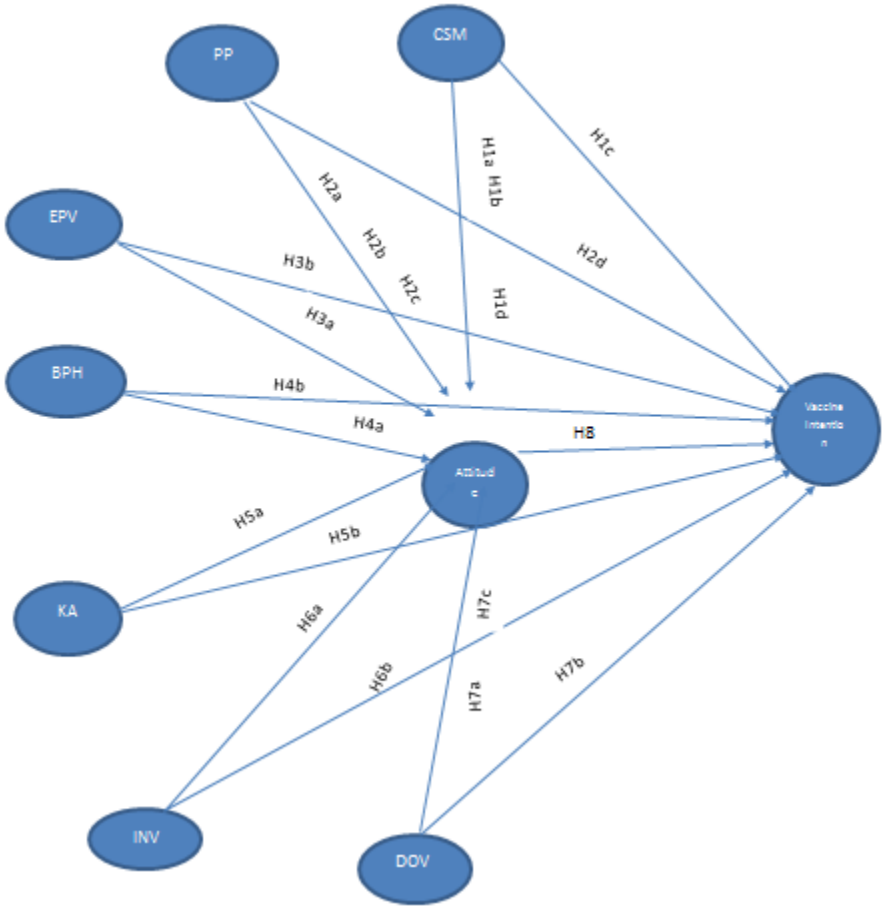

FIGURE 1
THEORETICAL MODEL FOR VACCINATION INTENTION (INSERT HERE)

To understand consumer attitudes towards vaccine policy we have developed certain constructs based on literature review and developed a hypothesis based on the gaps found in those studies.

Communication and Social Media Environment (CSM)

The success of any vaccination policy depends on the communication strategy adopted to reach the masses and avoid misinformation and fake news. Numerous studies have been conducted to relate impact of communication on vaccine policy. False claims and misinformation have damaged the efforts to vaccinate people which could have halted the corona virus epidemic (Ball, 2020). As per the study conducted on misinformation about the COVID-19 vaccine in the United Kingdom and the United States, misinformation having a scientific nature is more strongly associated with a decrease in vaccine intention, and exposure to misinformation affects socio-demographic groups differently (Loomba et al., 2021). The source of communication also has a significant impact on the masses.

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The traditional media is oriented to promote data-driven and informed vaccine content to their audiences, while social media plays a role in educating those who are hesitant to take the vaccine (Piltch-Loeb et al., 2021). However, since social media gives the liberty to choose the content, most of the population is exposed to anti-vaccination videos and messages. To certain extent it reduces the public confidence on vaccines and promotes vaccine hesitancy (Puri et al 2020). Nearly 60% of COVID-19-related material was discovered to be fake news, posing a serious threat to public health (Al-Zaman, 2021). From the above review, it is clear that source of information and social media has a significant impact on people's attitude towards vaccination. Hence, we propose the following hypothesis.

H_{1a}: *Social Media has a significant influence on the attitude of consumers.*

H_{1b}: *Source of Information has a significant influence on the attitude of consumers.*

H_{1c}: *Lack of promotion of Govt vaccination programs has a significant influence on vaccination intention of consumers.*

H_{1d}: *Booking of Vaccination slots through cowin app has a significant influence on the attitude of consumers, which guides their intention towards vaccination.*

Policies & Politics (PP)

Government policies should be structured to encourage the use of existing technologies while also providing incentives for the development of new technologies in the development and use of vaccines (Finklstein, 2004). Governments all across the world have been prepared to fund vaccine development financially (Towse & Firth 2020) In recent years, policy discussions have mostly focused on the issue of vaccine hesitancy and lack of public participation at a stage that will promote herd immunity (Calnan & Douglass 2020) Despite the necessity for a vaccine to prevent COVID-19 transmission, a vigorous vaccine opposition movement in the United States has risen against the idea of a COVID-19 vaccination (Sear et al., 2020). As seen by the 2019 measles outbreaks (Centers for Disease Control and Prevention), vaccination opposition has a variety of health and policy consequences. Vaccine opposition is on the rise in the United States, as is public skepticism of health authorities, as many individuals have turned against the Centers for Disease Control and Prevention (Lipton et al., 2020).

H_{2a}: *Vaccination policies of Govt has significant influence on the attitude of consumers*

H_{2b}: *Mismanagement of vaccination programs significant influence on the attitude of consumers which guides their vaccine intention.*

H_{2c}: *Lack of vaccination facilities for terminally ill and bed ridden patients significant influence on the attitude of consumers*

H_{2d}: *Lack of transparency on side effects of vaccines has significant influence on vaccination intention of consumers*

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Previous Vaccination Experience (EPV)

COVID-19 vaccine adverse effects have an important influence in building public trust in the vaccine and its uptake. The most common cause of vaccine hesitancy among population groups in the United Kingdom, according to a recent nationwide study, was the aversion to vaccinations' because of potential negative effects (U.K.) (Luyten et al., 2019) Fear of side effects was the most important cause for decline in preparedness among healthcare workers in Poland to take COVID immunization (Szmyd et al., 2021).. Raising public awareness of vaccine effectiveness and honesty about side effects is critical for improving vaccine uptake (Jarrett et al., 2015) In a study comparing the first and second doses, the FDA discovered that the frequency of adverse effects amongst the local population was higher after the second dose in comparison to that of first. (Centers for Disease Control and Prevention 2021) .From the above review it is evident that customers rely to a very great extent on the opinion of the people who have suffered side effects s of vaccination. Thus we propose the following hypothesis.

H_{3a}: *Past experience with the first dosage has a significant impact on attitude about the Covid vaccination.*

H_{3b}: *Past experience with other vaccines has a significant impact on vaccination intention of consumers*

Beliefs, Perception about Health and Prevention (BPH)

Many people have shown great concern and knowledge about the pandemic and are aware of the positive and negative impacts of taking Covid vaccinations. The available Covid vaccines are effective only for the patients whose CT score is <30 and renders ineffective whose XCT score is >30 (Pritchard et al., 2021). Covid vaccine hesitancy is very high amongst a one fifth of the population in the US on account of disbelieves pertaining to its cure rate Khubchandani et al., (2021). People consider Vaccines as an inexpensive and effective measure to fight against the pandemic. People believe that it's a long term solution to the pandemic (Bloom et al., 2017). The negative impact of the vaccine is that it may lead to sudden outbreak of VPD's (Vaccine Preventable Debases) in developing countries where the vaccination programme will have to be halted temporarily. The positive impact is that people may develop enough faith in the Country's vaccination policy, healthcare machinery, and the government Ali, (2020). Impact of COVID-19 on vaccination programs: adverse or positive? It has become evident that people are aware of the positive and negative impacts of vaccination to a very great vaccine, which has helped them form opinions, beliefs, and perceptions about the entire vaccination policy. Hence we postulate the following hypothesis.

H_{4a}: *The belief and perception about the vaccination drives has a significant influence on the attitude of consumers*

H_{4b}: *Immunity Development via vaccine has a significant influence on vaccination intention of consumers*

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Knowledge/awareness about Covid Vaccines (KA)

The widespread use of IT and ITES (Information Technology Enabled Sectors) has deeply impacted the lives of common people in India .Knowledge and awareness amongst the people pertaining to Covid pandemic and its cure is widely demonstrated. But, those associated with the medical profession seemed to possess greater and deeper knowledge in comparison to students and people belonging to other professions (other than medicine) (Xu et al., 2020). A seemingly positive association has pertaining to knowledge about Covid is found amongst people who are educated, who are self-sufficient and the ones who have easy access to different sources of information (Tariq et al., 2020). People who have access to the internet demonstrate higher levels of awareness on any contemporary issues than those who do not have access (Chaturvedi et al., 2021). People at large are totally aware that vaccines are the only solution available to flatten the curve of the contagion and help protect the vulnerable Faasse & Newby (2020). From the above review it is clear that people have been able to gather enough information on the vaccination policy which has helped them to create awareness. Therefore, we propose the following hypothesis.

H_{5a}: *Having enough information on the Covid vaccines has a significant influence on the attitude of consumers.*

H_{5b}: *Information provided by Vaccine providers has a significant influence on vaccination intention of consumers.*

Introduction of a New Vaccine or New Formulation (INV)

The Government and policy makers should carefully weigh the evidences required for the final approval of the vaccinations even if it takes some time for the trials (Tervonen et al., 2021). The parameters considered for a successful vaccine in clinical trials versus human trials have to be studied thoroughly to avoid any risks to human life. Since there are many vaccines for Covid 19 already available; enough time, energy, and resources have to be deployed by the vaccine makers to arrive at successful prescriptions. Disparities have been found in terms of performance and efficiency of vaccines (Dai et al., 2021). Carelessness regarding the minutest of things can have major consequences (Krause et al., 2020). From the above studies, it is very clear that people are very concerned about the brand of vaccine and how many successful trials a particular vaccine has gone through. People are even ready to wait for others to take the vaccine and observe their side effects and only then decide which brand to choose. Thus, we arrive at the following hypothesis:

H_{6a}: *The choice of a particular brand of a vaccine has a significant influence on the attitude of consumers.*

H_{6b}: *The safety parameters of a vaccine have significant influence on vaccination intention of consumers.*

Design of Vaccination Program (DOV)

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The Covid 19 vaccination policy has a great deal to do with the mode of administration of the vaccination programme (Taylor & Asmundson, 2020). The design of the vaccination programme largely depends on the time frame and hygiene factor involved at the vaccination centers (Martin & Petrie, 2017). Apprehension over the belief and lawfulness of the organizations (health care centres) administering the vaccination has again come to the fore following the Covid 19 Pandemic (Dobrowolski, 2021). From the above discussion it is evident that the consumer's prime concern is how the vaccination programme is designed and most importantly how it will be administered. Therefore, we propose the following hypothesis for the purpose of our study.

H_{7a}: *The Design of the Vaccination Programme significantly influences the attitude of consumers*.

H_{7b}: *Fear of getting infected in mass vaccination centers has significant influence on vaccination intention of consumers*.

H_{7c}: *Ease of Vaccination program has significant influence on attitude of consumers which affects vaccination intention of consumers*.

Attitude

Eagly & Chaiken (1993) defined attitude a psychological phenomenon which refers to assessment on an entity. WHO (2014) mentioned that intention and attitude towards vaccines varies from one individual to other. The attitude of an individual towards vaccination is shaped by various factors (Cordina 2021). Attitude towards vaccination is shaped by factors such as vaccine attributes and policy interventions (Kreps et al., 2021). They further elaborated that attitude towards vaccination was not affected due to vaccine manufacturer or by misinformation about Covid vaccines. Barello et al. (2020) their study conducted on students of Italy found that attitude towards vaccination was influenced by factors such as health knowledge, psychological factors and individual responsibility towards society found that vaccine hesitancy was strongly associated with psychological factors**.** Cordina et al. (2021) in her study found a significant relationship between attitude and social media. In research conducted by Fridman et al. (2021) in United States it was discovered that intention to take vaccines decreases with increase in availability of vaccines He further elaborated that this intention could be linked to developing perception of virus being less harmful. Based on above review we propose the following hypothesis.

H_{8}: *Attitude is a significant predictor for consumer intention to take vaccine.*

Development of Questionnaire and Data Collection

To predict consumers' attitude and intention, a comprehensive questionnaire was designed and an online survey was conducted. The questionnaire was developed on the basis of previous literature to dispel any doubts on accuracy of content. An expert panel examined the questionnaire to ensure authentic representation of variables and to dispel any vagueness and uncertainty. The panel included one expert from the healthcare sector, 4 from academia and 3 research scholars.

A two way test was carried out for designing the questionnaire. In the first stage the questionnaire was shared with six people from academia to check the validity of content and

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ratify it. After undergoing a minor revision, the questionnaire was further sent to 30 participants for pilot testing. The participants consisted of academicians, research scholars, undergraduates, post graduates and people from industry. The final questionnaire was prepared after incorporating suggestions from all the participants. This process helped in developing an appropriate questionnaire to match the objective of the research. The questionnaire was divided into two parts. The first part incorporated questions pertaining to personal details like name, gender, income, education level while the second part consisted of aforesaid constructs of respondents with indicators. A five point Likert scale was used to avoid binary responses which offered wide range to participants.

To ensure healthy response rates from the respondent's diverse methods were employed such as online survey, guarantee of privacy protection and personalized communication to clear the doubts of participants. We were able to approach 500 participants on basis of our personal contact. The participants consisted of respondents with age group of 18-75 years. In total we received 436 responses and after filtering out the unfilled responses the final sample size was 404. As the survey was conducted online and questionnaires were in English, the minimum eligibility criteria for respondents is high school passed, which was also a limitation for our research as people of rural areas could not participate in our survey. Also we were unable to float questions to major cities in the country due to its large size hence this also was one of the limitations of our research.

Analysis of Data and Result

The data analysis has been done in three steps. To identify the constructs having major impacts, exploratory factor analysis was done. Analysis of constructs was done to check whether the indicators were fully able to explain them or not. In next step analysis was done using IBM SPSS 26 Software. In next step Confirmatory factor analysis was performed to measure the convergent and discriminatory analysis. In third step, SEM was performed to test the significance of the hypothesis and to determine the model fit (Loh Moller, 1988). IBM Amos 26 Software was used to perform second and third steps.

Exploratory Factor Analysis

It is performed to enhance the precision of measurement of the intention for vaccination and to Figure 1 out the redundant indicators which lack common core. Prior to EPA Bartlett Sphericity test was performed to test appropriateness of data and KMO (Kaiser- Meyer - Olkin) test was done to figure out the adequacy of data. The KMO value displayed was 0.7 and Bartlett Sphericity test value was 0.00 which indicated that inter-correlation matrix had enough common variance to make the factor analysis significant. Previous researches have reflected that the least acceptable KMO value is 0.5 (Nunnally 1978). This indicates that matrix is not affected by multicollinearity and singularity (Chattopadhyay et.al. 2012). Cronbach alpha was done for each construct to test the reliability of the questionnaire as shown in Table 2.

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Table 2
EXPLORATORY FACTOR ANALYSIS OF CONSTRUCTS

Constructs	Indicator	Mean	Std. Deviation	Factor Loading	Cronbach Alpha
Communication and Social Media Environment	CSM1	2.49	1.107	0.758	0.707
	CSM2	3.44	1.423	0.752	
	CSM3	3.10	1.365	0.775	
	CSM4	2.59	1.363	0.845	
Policies and Politics	PP1	3.26	1.339	0.593	0.844
	PP2	2.35	1.302	0.798	
	PP3	3.23	1.116	0.744	
	PP4	3.02	1.173	0.831	
Previous Vaccination experience	EPV1	2.31	1.331	0.742	0.744
	EPV2	1.83	1.125	0.740	
Believe and Perception about Health	BPH1	4.17	1.040	0.727	0.725
	BPH2	4.44	0.955	0.830	
	BPH3	2.31	1.233	0.571	
	BPH4	3.02	1.245	0.778	
Knowledge/ Awareness about Vaccine	KA1	3.65	1.173	0.617	0.826
	KA2	3.49	1.260	0.723	
	KA3	3.49	1.189	0.734	
Introduction of New Vaccines	INV1	2.91	1.359	0.718	0.754
	INV2	2.29	1.347	0.745	
	INV3	2.99	1.162	0.942	
Design of Vaccination Program	DOV1	3.73	1.234	0.986	0.743
	DOV2	2.62	1.179	0.802	
	DOV3	3.02	1.335	0.780	
	DOV4	1.95	1.163	0.920	
Attitude Towards Vaccination	AT1	3.87	0.973	0.842	0.876
	AT2	3.88	1.082	0.848	
	AT3	3.58	1.159	0.985	

The overall value of cronbach alpha test was found to be 0.84 and the value of construct lies between the range of 0.725- 0.943. The acceptable value of cronbach alpha is 0.7 (Tonglet et al. 2004). Thus it was proved that the construct and questionnaire of this study was reliable. For EFA the varimax rotation, principal component analysis and Eigen value >1 and loading factor > 0.7 was used (Kaiser, 1958). Indicators with loading factors less than 0.7 was removed to rationalize the analysis. For example indicator PP1 (Policies & Politics) had a factor loading of 0.593 as a result of which it was removed. This reflects that indicator PP1 is misfit for the questionnaire. Similarly, indicators PI2 and BPH3 were removed from the questionnaire due to low factor loading

Confirmatory Factor Analysis

To decipher the nature of data, the mean and SD of indicators had been calculated (Table 2). Those indicators whose mean was higher than their SD indicated a lower degree of variation and scored high on the reliability index. It was deciphered that Correlation was insignificant among constructs and indicators as the Variation inflation factor was below 3.3 (Diamantopoulos

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& Siguaw 2006; Jimenez- Para et al. 2014). To supplement the reliability of constructs Cronbach alpha test was performed (Fronell & Larcker 1981).

Table 2 represents the Cronbach alpha value for each construct, which lies between 0.725-0.943, indicating a high-reliability index (Tenenhaus et al. 2005). AVE (average Variance Extracted was calculated to confirm the validity of constructs. The average value of AVE should be equal to or > 0.5 to confirm the validity.

Table 3
CONFIRMATORY FACTOR ANALYSIS OF CONSTRUCTS

Constructs	Indicator	AVE	CR
Communication and Social Media Environment	CSM1	0.71	0.812
	CSM2		
	CSM3		
	CSM4		
Policies and Politics	PP1	0.701	0.873
	PP2		
	PP3		
	PP4		
Previous Vaccination experience	EPV1	0.851	0.912
	EPV2		
Believe and Perception about Health	BPH1	0.782	0.956
	BPH2		
	BPH3		
Knowledge/ Awareness about Vaccine	KA1	0.845	0.942
	KA2		
	KA3		
Introduction of New Vaccines	INV1	0.774	0.848
	INV2		
Design of Vaccination Program	DOV1	0.832	0.893
	DOV2		
	DOV3		
	DOV4		
Attitude Towards Vaccination	AT1	0.783	0.902
	AT2		
	AT3		

Table 3 represents AVE of all the constructs that fall within the range of 0.66 to 0.84 which is above the standard value of 0.5 (Fornell & Larcker 1981). Table 4 represents result of discriminant validity test as per guidance of Fornell & Larcker (1981). The values were found be lower than square root of AVE.

Structural Equation Model (SEM)

After determining the validity of the model, SEM is used to test the hypothesis. The model was graded on several parameters. (i) The SEM relationships were measured by T test and path analysis. (ii) The accuracy of the model was determined by R^2 (Coefficients of Determination Falk & Miller, 1992). The findings have been shown in Table 5.

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Table 4 DEMOGRAPHIC DESCRIPTION OF RESPONDENTS	
Variables	**%**
Gender	
Male	51
Female	49
Age	
<20	10.2
21-40	62.2
>40	27.6
Marital Status	
Single	34
Married	66
Education	
Intermediate	1.9
Graduation	83.5
Post-Graduation	14.6
Employment Status	
Government Sector	24
Private Sector	36
Business	26
Any Other	14

Table 5
RESULTS OF STRUCTURAL EQUATIONAL MODEL

Hypothesis	Effect	Direct Effect	Indirect Effect	P value	T test	β	Comment
H1a	CSM1→ATTdirect	0.208					
H1b	CSM2→ VI direct	0.117		0.833	0.211	0.03	Not Supported
H1c	CSM3 → ATT direct	0.321		0.054	-1.93	0.68	Supported
H1d	CSM4 → VI indirect		0.046	0.049	-1.972	-0.79	Supported
H2a	PP1 → ATT direct	0.206		0	*	0.23	Supported
H2b	PP2 → VI direct	0.196		0.165	1.39	0.44	Not Supported
H2c	PP3 → VI indirect		0.072	0.136	1.491	0.67	Not Supported
H2d	PP4 → ATT direct	0.342		0.03	1.516	0.79	Supported
H3a	EPV1 → ATT direct	0.232		0	*	0.84	Supported
H3b	EPV2 → VI indirect			0	5.77	0.74	Supported
H4a	BPH1 → ATT direct	0.235		0	6.232	0.79	Supported
H4b	BPH2 → VI indirect		0.212	0.001	3.21	0.46	Supported

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H5a	KA 2 → ATT direct	0.132		0	-2.031	-0.226	Supported
H5b	KA 3 → VI indirect		0.074	0.809	-2.036	-0.013	Not Supported
H6a	INV1 → ATT direct	0.289		0	3.469	-0.141	Supported
H6b	INV2 → VI indirect		0.103	0.041	-0.641	0.19	Supported
H7a	DOV1 → ATT direct	0.213		0.368	0.554	0.251	Not Supported
H7b	DOV2 → VI indirect		0.121	0.021	1.489	0.054	Supported
H7c	DOV2 → VI direct	0.042		0.035	4.38	0.182	Supported
H8	ATT → VI direct	0.124		0.032	1.356	0.314	Supported

P <0.05, T > 1.96

Major Findings & Discussion

The questionnaire was circulated among 500 participants out of which 463 responded. After filtering the partially filled responses total 384 responses were considered for the research paper. The respondents included males and females in equal proportion. 10.2% of the respondents belonged to age group of less than 20 years. 62.2% belonged to age group of 21-40 years and 27.6% were above 40 years. 66% of the respondents were married and 34 % of the respondents were single. The educational background of 1.9% was intermediate, 83.5% were graduate and 14.6% had completed their post-graduation. 24% of the respondents were government employee, 36% were working in private sector, 26% had their own business and 14% were freelancers and part time workers. The details of the demographic findings have been shown in Table 6.

Table 6
DISCRIMINANT VALIDITY TEST OF CONSTRUCTS

	AT	CSM	PP	EPV	BPH	KA	INV	DOV
AT	0.573							
CSM	-0.848	0.843						
PP	0.946	-0.831	0.838					
EPV	0.737	0.764	0.658	0.889				
BPH	0.821	0.739	0.687	0.823	0.922			
KA	0.603	0.0698	-0.26	0.699	0.675	0.919		
INV	-0.319	0.712	0.641	0.726	0.697	0.418	0.879	
DOV	0.804	0.689	0.644	0.692	0.557	0.351	0.669	0.912

Interestingly Hypothesis H1a revealed that social media has significance influence on the attitude of consumers towards vaccination. β=0.31 P<0.05.Wilson (2020) in their study found that a significant relationship between social media and people attitude towards vaccination. The misinformation propagated in social media created doubts in the minds of consumers regarding the safety and efficacy of the vaccines. The source of the information generated in social media did not have any impact the attitude of the consumers. However hypothesis H1c revealed that lack of promotion of government vaccination programs had significant influence on the vaccination intention of the consumers β=0.68 P<0.05 in their research conducted on population in Kenya established a significant relationship between promotional programs and vaccine acceptancy. They further revealed that willingness to take vaccine was guided more by promotional programs rather than individual belief. Hypothesis H1d revealed that booking of

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Vaccination slots through cowin app has a significant influence on consumers' attitude, which guides their intention towards vaccination β=- 0.79 P<0.05. The reason for this outcome could be that use of technology helped significantly in smoothening the process of taking vaccination as consumers had accurate information about vaccination centers and availability of vaccination slots.

It was found that the government's vaccination policies had significant influence on the attitude of the consumers β=0.23 P<0.05. Gesser et al. (2015) in their study found that immunization program launched by government significantly impacted the population perception about vaccination. Consumers having positive approach towards vaccination would tend to support the vaccine polices of the government in comparison to those who have negative approach towards vaccination. No significant relationship was found between mismanagement of vaccination centers and consumer attitude towards vaccination. Lack of vaccination support for terminally ill patients did not have any significant influence of the attitude of consumers. Hypothesis H2d revealed that lack of transparency on vaccine side effects had a significant influence on consumers' vaccination intention β=0.79 P<0.05. Kerr et al. (2021) in their study conducted among British population found that lack of transparency in vaccine side effects did not have any significant influence on the consumer intention for vaccination. In their research, revealed that transparency in communication regarding vaccine though negative may lower the acceptance but increases the trust in vaccine while false positive information did not lead to increase in acceptance of vaccines.

Interestingly, Hypothesis H3a revealed that past experience with the first dosage of vaccine had a significant impact on consumers' attitude towards covid vaccination β=0.84 P<0.05**.** Robbins 2021 in article published in New York times mentioned that millions of people are skipping their second dosage of Covid Vaccine. The reason being that they fear repeat of side effects which they had suffered after taking the first dose of vaccine and also they believe that one dosage of vaccine is sufficient for them to prevent the infection. Hypothesis H3b revealed that past experience with other vaccines has significant impact on vaccination intention of consumers β=0.74 P<0.05. Marlow et al., (2007) in their study revealed that past experience and the relationship and trust with doctors significantly affected that vaccine intention of consumers.
Hypothesis H4a revealed that the belief and perception about the vaccination drives has a significant influence on the attitude of consumers β=0.79 P<0.05. The reason could be that the level of trust people have on vaccination drive determines their positive or negative approach. In their study, Sharma & Srivastava (2021) found out that level of education and socio economic status played a significant role in shaping the belief and perception of consumers towards vaccination. They further revealed that safety of vaccines was also a major concern among the population. Hypothesis H4b revealed that Immunity Development via vaccine has a significant influence on vaccination intention of consumers β=0.46 P<0.05. Stefan et al., (2021) in their study conducted in UK found a significant relationship between the intention to take vaccination and knowledge about attaining herd immunity through vaccination.

In regards to knowledge and awareness it was found that enough information on covid vaccines has a significant influence on the attitude of consumers regarding vaccination β=-0.22 P<0.05 in study conducted on UK and Ireland found out that those respondents who were less informed or ill-informed about vaccine were having low level of trust in vaccination drive. No significant relationship was found between information provided by vaccine manufacturers and intention for vaccination. Interestingly Hypothesis H6a revealed that the choice of a particular brand of a vaccine has a significant influence on the attitude of consumers. β=-0.141 P<0.05 in

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their study found out a significant relationship between branding and country of origin of vaccines and intention for vaccination among general population. Hypothesis H6b revealed that safety parameters of a vaccine have significant influence on vaccination intention of consumers $\beta= 0.190$ $P<0.05$. Yu et al. (2021) in their study conducted in Portugal found a significant relationship between safety of a vaccine and intention for vaccination.

No significant relationship was found between design of vaccination program and attitude for vaccination. Hypothesis H7b revealed that fear of getting infected in mass vaccination centers had significant influence of vaccination intention of consumers $\beta= 0.054$ $P<0.05$. Ease of vaccination program was found to have significant relationship with intention to get vaccinated $\beta= 0.184 P<0.05$. Attitude of vaccination was found to have significant relationship with intention to get vaccinated $\beta=0.314$ $P<0.05$ in their study found that negative attitude acts a barrier against vaccination.

Managerial Implications

The current study has focused on understanding the impact of factors like communication and social media environment, government policies, design of vaccination program on the attitude of respondents towards vaccination. The paper further explores how the vaccination intention gets affected by factors like previous vaccination experience, knowledge about vaccines and belief and perception about health.

The study is very useful for health service providers and government agencies as it provides an insight into the mindset of consumers regarding the vaccination program. The study helps to gauze the role of communication in shaping the consumer attitude towards vaccination. Authorities should focus on generating impactful communication through social and other media to generate positive attitude among the target population. It further reveals that social media campaigns should be launched on regular basis to counter the negative propaganda against vaccination. The current study also helps to understand that government polices significantly influences the consumer's attitude towards vaccination. Government should focus on increasing the transparency and convenience in the vaccine delivery mechanism. Door to door campaign, increase in vaccination centers, mobile vans should be launched to uplift the vaccination drive and reduce the fear of getting infected in mass vaccination drives.. Special drive should be launched for terminally ill and bed ridden patients. The study also highlighted the role of technology in monitoring the vaccine delivery program. Technology helped in increasing transparency in terms of availability of vaccine and in locating the vaccination centers. The study also revealed that people experience side effects with previous dosage of vaccines were reluctant to go for second dosage. The concern authorities should launch awareness campaigns to dissipate the apprehensions among the people about the side effects and safety of vaccines. Medical practitioners and health care providers should encourage the masses to get vaccinated and remove any negativity surrounding it. Authorities should rope in celebrities, sports people, and NGOs to create a positive perception of vaccination. Further the study highlighted that introduction of new vaccines also influenced the vaccination intentions they are more effective in nullifying the mutations in the virus. The current study further revealed that brand image and safety parameters followed by vaccines also have a significant role in shaping the attitude of the population towards vaccination. Authorities should make the information regarding safety parameters followed by vaccines transparent to the public and create an autonomous body that could ratify the safety of vaccines.

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CONCLUSION

In this paper, the authors have attempted to explore the various factors which shape the consumer attitude towards vaccination. The research revealed that social media played a pivotal role in shaping consumers' attitude towards vaccination. Promotional campaigns highlighting the benefits of vaccination significantly influenced consumer vaccination intention. The study further revealed that use of technology increased the convenience and coverage of vaccination drive. Furthermore, Government policies and vaccination guidelines also significantly impacted attitude towards vaccination. The study further highlighted that transparency in vaccination programs helped in shaping a positive approach towards vaccination. In this regard, previous vaccination experience significantly impacted consumer attitude towards vaccination. Side effects and level of immunity developed by vaccines also shaped the consumer vaccination intention. It was found that brand value of vaccines and the convenience of getting vaccine played a substantial role in shaping the attitude towards vaccination. It further revealed that fear of getting infected in mass vaccination drive increased the vaccination hesitancy among consumers.

Like other research, this study also has certain limitations that offer further research. Since the questionnaire was framed in English and circulated online, we could not reach diverse populations belonging to rural backgrounds. For further research, it is recommended that questions should be framed in vernacular language. Since the questionnaire was circulated among limited population, the sample size was small. For future research, it is advised to increase the sample size. The researchers have not considered factors like gender and socio-economic background of population, which could have thrown some interesting insights in the study.

REFERENCES

Al-Zaman, M.S. (2021). COVID-19-related online misinformation in Bangladesh. *Journal of Health Research*.

Arao, D.A. (2021). Vaccinations and other vacillations. Media Asia, 48:4, 239-242.

Ali, I. (2020). Impact of COVID-19 on vaccination programs: adverse or positive?. *Human Vaccines & Immunotherapeutics*, *16*(11), 2594-2600.

Ball, P. (2020). Anti-vaccine movement could undermine efforts to end coronavirus pandemic, researchers warn. *Nature*, *581*(7808), 251-252.

Bloom, D.E., Canning, D., & Weston, M. (2017). The value of vaccination. In *Fighting the Diseases of Poverty* (pp. 214-238). Routledge.

Calnan, M., & Douglass, T. (2020). Hopes, hesitancy and the risky business of vaccine development. *Health, Risk & Society*, *22*(5-6), 291-304.

Chaturvedi, S., Purohit, S., & Verma, M. (2021). Effective Teaching Practices for Success During COVID 19 Pandemic: Towards Phygital Learning. *Front. Educ. 6: 646557.*

Cordina, M., & Lauri, M.A. (2021). Attitudes towards COVID-19 vaccination, vaccine hesitancy and intention to take the vaccine. *Pharmacy Practice (Granada), 19*(1).

Dai, T., Song, JS. (2021) Transforming COVID-19 vaccines into vaccination. *Health Care Manag Sci* 24**,** 455-459.

Diamantopoulos, A., & Siguaw, J.A. (2006). Formative versus reflective indicators in organizational measure development: A comparison and empirical illustration. *British journal of management*, *17*(4), 263-282.

Dib, F., Mayaud, P., Chauvin, P., & Launay, O. (2021). Online mis/disinformation and vaccine hesitancy in the era of COVID-19: Why we need an eHealth literacy revolution. *Human vaccines & immunotherapeutics*, 1-3.

Dobrowolski, Z. (2021). The strategy of vaccination and global pandemic: how framing may thrive on strategy during and after Covid-19. *European Research Studies Journal*, *24*(1).

Eagly, A.H., & Chaiken, S. (1993). *The psychology of attitudes*. Harcourt brace Jovanovich college publishers.

Falk, R.F., & Miller, B. (1992). A Primer for Soft Modeling. The University Akron Press,Akron.

Faasse, K., Newby, J. (2020) Public Perceptions of COVID-19 in Australia: Perceived Risk, Knowledge, Health-

Citation Information: Verma, A., Verma, M., Boaler, M.S., & Mandala, G.N. (2022). Determinants of consumer intention towards covid vaccination the mediating role of attitude. *Academy of Marketing Studies Journal, 26*(3), 1-20.

Protective Behaviors, and Vaccine Intentions. Front Psychol. 2020 Sep 30;11: 551004.
Feleszko, W., Lewulis, P., Czarnecki, A., & Waszkiewicz, P. (2021). Flattening the curve of covid-19 vaccine rejection—An international overview. *Vaccines*, *9*(1), 44.
Finkelstein, A. (2004). Static and dynamic effects of health policy: Evidence from the vaccine industry. *The Quarterly Journal of Economics*, *119*(2), 527-564.
Fornell, & Larcker, D.F. (1981), Evaluating structural equational models with unobservable variables and measurement error . *J Market Res 18*(1), 39-50.
Fridman, I., Lucas, N., Henke, D., & Zigler, C.K. (2020). Association between public knowledge about COVID-19, trust in information sources, and adherence to social distancing: Cross-sectional survey. *JMIR Public Health and Surveillance*, *6*(3), e22060.
Fridman, A., Gershon, R., Gneezy, A. (2021) COVID-19 and vaccine hesitancy: A longitudinal study. PLoS ONE 16(4): e0250123.
García, L.Y., & Cerda, A.A. (2020). Acceptance of a COVID-19 vaccine: A multifactorialconsideration. *Vaccine*, *38*(48), 7587.
Geisser, S. (1975). The predictive sample reuse method with applications. *J Am Stat Assoc 70*(350), 320-328.
Gesser-Edelsburg, A., Walter, N., Shir-Raz, Y., & Green, M.S. (2015). Voluntary or mandatory? The valence framing effect of attitudes regarding HPV vaccination. *Journal of health communication*, *20*(11), 1287-1293.Goudge, J., & Gilson, L. (2005). How can trust be investigated? Drawing lessons from past experience. *Social science & medicine*, *61*(7), 1439-1451
Guelmami et al. (2021)" Social Media Coivd19 information and vaccine decision- A latent class analysis. SSRN , 7th May 2021.
Harapan H, Wagner, A.L., Yufika A, Winardi, W., Anwar, S, Gan, A.K., Setiawan, A.M., Rajamoorthy, Y., Sofyan, H., & Mudatsir, M. (2020) Acceptance of a COVID-19 Vaccine in Southeast Asia: A Cross-Sectional Study in Indonesia. *Front. Public Health* 8:381.
Harris, K.M., Maurer, J., Kellermann, A.L. (2010) Influenza vaccine—safe, effective, and mistrusted. New England *Journal of Medicine.* 2010 2;363(23):2183–5.
Henneman, L., Vermeulen, E., Van El, C.G., Claassen, L., Timmermans, D.R., & Cornel, M.C. (2013). Public attitudes towards genetic testing revisited: comparing opinions between 2002 and 2010. *European Journal of Human Genetics*, *21*(8), 793-799.
Horne, Z., Powell, D., Hummel, J. E., & Holyoak, K. J. (2015). Countering antivaccination attitudes. *Proceedings of the National Academy of Sciences*, *112*(33), 10321-10324.
Hussain, A., Ali, S., Ahmed, M. & Hussain, S. (2018) The anti-vaccination movement: a regression in modern medicine. Cureus 10, e2919.
Jacobson, R.M., Sauver, J.L.S., & Rutten, L.J.F. (2015). Vaccine hesitancy. In *Mayo Clinic Proceedings* (Vol. 90, No. 11, pp. 1562-1568). Elsevier.
Jarrett, C., Wilson, R., O'Leary, M., Eckersberger, E., & Larson, H.J. (2015). Strategies for addressing vaccine hesitancy–A systematic review. *Vaccine*, *33*(34), 4180-4190.
Kaiser, H.F. (1958). The varimax criterion for analytic rotation in factor analysis. *Psychometrika*, *23*(3), 187-200.
Kanabar, K., & Bhatt, N. (2021). Communication interventions to address COVID-19vaccine hesitancy in India. *Media Asia*, 1-8.
Kanozia, R., & Arya, R. (2021). "Fake news", religion, and COVID-19 vaccine hesitancy in India, Pakistan, and Bangladesh. *Media Asia*, 1-9.
Karlsson, L. C., Soveri, A., Lewandowsky, S., Karlsson, L., Karlsson, H., Nolvi, S., ... & Antfolk, J. (2021). Fearing the disease or the vaccine: The case of COVID-19. *Personality and individual differences*, *172*, 110590.
Kerr, J.R., Freeman, A.L., Marteau, T.M., & van der Linden, S. (2021). Effect of information about COVID-19 vaccine effectiveness and side effects on behavioural intentions: two online experiments. *Vaccines*, *9*(4), 379.
Kim, J.H., Marks, F., & Clemens, J.D. (2021). Looking beyond COVID-19 vaccine phase 3 trials. *Nature medicine*, *27*(2), 205-211.
Kreps, S., Dasgupta, N., Brownstein, J.S. et al. (2021) Public attitudes toward COVID-19 vaccination: The role of vaccine attributes, incentives, and misinformation. *npj Vaccines* 6**,** 73 (2021).
Khubchandani, J., Sharma, S., Price, J.H., Wiblishauser, M.J., Sharma, M., & Webb, F.J. (2021). COVID-19 vaccination hesitancy in the United States: a rapid national assessment. *Journal of Community Health*, *46*(2), 270-277.
Kohlhammer, Y., Schnoor, M., Schwartz, M., Raspe, H., & Schäfer, T. (2007). Determinants of influenza and pneumococcal vaccination in elderly people: a systematic review. *Public health*, *121*(10), 742-751.

Citation Information: Verma, A., Verma, M., Boaler, M.S., & Mandala, G.N. (2022). Determinants of consumer intention towards covid vaccination the mediating role of attitude. *Academy of Marketing Studies Journal, 26*(3), 1-20.

Kumar, V.M., Pandi-Perumal, S.R., Trakht, I., & Thyagarajan, S.P. (2021). Strategy for COVID-19 vaccination in India: the country with the second highest population and number of cases. *npj Vaccines*, *6*(1), 1-7.

Lane S., MacDonald N.E., Marti M., & Dumolard L. (2015) Vaccine hesitancy around the globe: Analysis of three years of WHO/UNICEF Joint Reporting Form data-2015–2017. *Vaccine.* 2018.

Lazarus, R. et al. (2021) "A global survey of potential acceptance of a Covid -19 Vaccine" Nature Medicine 27, P-225-228,2020

Leos-Toro, C., Ribeaud, D., Bechtiger, L., Steinhoff, A., Nivette, A., Murray, A.L. & Shanahan, L. (2021). Attitudes Toward COVID-19 Vaccination Among Young Adults in Zurich, Switzerland, September 2020.

Lipton, E., Goodnough, A., Shear, M.D., Twohey, M., Mandavilli, A., Fink, S., & Walker, M. (2020). The CDC waited 'its entire existence for this moment.'What went wrong?. *New York Times*, *3*, 2020.

Loewenstein, G.F., Weber, E.U., Hsee, C.K., & Welch, N. (2001). Risk as feelings. *Psychological bulletin*, *127*(2), 267.

Loomba, S., de Figueiredo, A., Piatek, S.J., de Graaf, K., & Larson, H.J. (2021). Measuring the impact of COVID-19 vaccine misinformation on vaccination intent in the UK and USA. *Nature human behaviour*, *5*(3), 337-348.

Loh Moller J.B (1988) The PLS program system latent variables path analysis with partial least squares estimation. .*Multivar Behav Res 23*(1) 125-127

Luyten, J., Bruyneel, L., & van Hoek, A.J. (2019). Assessing vaccine hesitancy in the UK population using a generalized vaccine hesitancy survey instrument. *Vaccine*, *37*(18), 2494-2501.

Marlow, L.A., Waller, J., & Wardle, J. (2007). Trust and experience as predictors of HPV vaccine acceptance. *Human vaccines*, *3*(5), 171-175.

Martin, L.R., & Petrie, K.J. (2017). Understanding the dimensions of anti-vaccination attitudes: The vaccination attitudes examination (VAX) scale. *Annals of Behavioral Medicine*, *51*(5), 652-660.

Mellet, J., & Pepper, M.S. (2021). A COVID-19 vaccine: big strides come with big challenges. *Vaccines*, *9*(1), 39.

Nunnally J.C. (1978) Psychometric Theory second ed. Mcgraw Hill Newyork USA.

Nyhan, B. & Reifler, J. (2015) Does correcting myths about the flu vaccine work? An experimental evaluation of the effects of corrective information. Vaccine 33,459-464.

Paul, A., Sikdar, D., Hossain, M.M., Amin, M.R., Deeba, F., Mahanta, J., & Nath, T.K. (2020). Knowledge, attitudes, and practices toward the novel coronavirus among Bangladeshis: Implications for mitigation measures. *PloS one*, *15*(9), e0238492.

Paules, C.I., Marston, H.D., & Fauci, A.S. (2019). Measles in 2019—going backward. *NewEngland Journal of Medicine*, *380*(23), 2185-2187.

Petersen, M. B., Bor, A., Jørgensen, F., & Lindholt, M.F. (2021). Transparent communication about negative features of COVID-19 vaccines decreases acceptance but increases trust. *Proceedings of the National Academy of Sciences*, *118*(29).

Piltch-Loeb, R., Savoia, E., Goldberg, B., Hughes, B., Verhey, T., Kayyem, J., & Testa, M. (2021). Examining the effect of information channel on COVID-19 vaccine acceptance. *Plos one*, *16*(5), e0251095.

Pritchard, E., Matthews, P.C., Stoesser, N., Eyre, D.W., Gethings, O., Vihta, K. D., & Pouwels, K.B. (2021). Impact of vaccination on new SARS-CoV-2 infections in the UK. *Med Rxiv*.

Puri Neha , Eric A Coomes, et al. (2020) " Social Media and Vaccine hesitancy: New updates for the era of covid 19 and globalized infectious diseases, *Human Vaccines and Immunotherapeutics* Vol 16, 2020.

Rebecca, R. (2021), "Millions are skipping their second doses of Covid Vaccines". The New York Times April 28 2021.

Reinhart, & Tibshirani. (2020) " Covid 19 symptom survey through Facebook " Blog 2020.

Reuben, R.C., Danladi, M.M., Saleh, D.A., & Ejembi, P.E. (2021). Knowledge, attitudes and practices towards COVID-19: an epidemiological survey in North-Central Nigeria. *Journal of community health*, *46*(3), 457-470.

Rhodes, M.E., Sundstrom, B., Ritter, E., McKeever, B.W., & McKeever, R. (2020). Preparing for A COVID-19 vaccine: A mixed methods study of vaccine hesitant parents. *Journal of Health Communication*, *25*(10), 831-837.

Salmon, D.A., Dudley, M.Z., Glanz, J.M., & Omer, S.B. (2015). Vaccine hesitancy: causes, consequences, and a call to action. *Vaccine*, *33*, D66-D71.

Sallam, M., Dababseh, D., Yaseen, A., Al-Haidar, A., Ababneh, N.A., Bakri, F.G., & Mahafzah, A. (2020). Conspiracy beliefs are associated with lower knowledge and higher anxiety levels regarding COVID-19 among students at the University of Jordan. *International journal of environmental research and public health*, *17*(14), 4915.

Citation Information: Verma, A., Verma, M., Boaler, M.S., & Mandala, G.N. (2022). Determinants of consumer intention towards covid vaccination the mediating role of attitude. *Academy of Marketing Studies Journal, 26*(3), 1-20.

Schiavo, R. (2020). Vaccine communication in the age of COVID-19: Getting ready for an information war. *Journal of Communication in Healthcare*, *13*(2), 73-75.

Schwarzinger, M., Watson, V., Arwidson, P., Alla, F., & Luchini, S. (2021). COVID-19 vaccine hesitancy in a representative working-age population in France: a survey experiment based on vaccine characteristics. *The Lancet Public Health*, *6*(4), e210-e221.

Sear, R.F., Velásquez, N., Leahy, R., Restrepo, N.J., El Oud, S., Gabriel, N., & Johnson, N.F. (2020). Quantifying COVID-19 content in the online health opinion war using machine learning. *Ieee Access*, *8*, 91886-91893.

Serena, et al. (2020) "Vaccine hesitancy' among university students in Italy during the COVID-19 pandemic" Springer Nature 6 Aug 2020

Sharma, A., & Srivastava, A. (2021). Perceptions and beliefs on vaccination for COVID-19 in Delhi: A cross-sectional study. *Indian Journal of Medical Specialities*, *12*(3), 151.

Stefan, N. (2021). Metabolic disorders, COVID-19 and vaccine-breakthrough infections. *Nature Reviews Endocrinology*, 1-2.

Szmyd, B., Karuga, F.F., Bartoszek, A., Staniecka, K., Siwecka, N., Bartoszek, A., & Radek, M. (2021). Attitude and behaviors towards SARS-CoV-2 vaccination among healthcare workers: A cross-sectional study from Poland. *Vaccines*, *9*(3), 218.

Tariq, S., Tariq, S., Baig, M., & Saeed, M. (2020). Knowledge, Awareness, and Practices Regarding the Novel Coronavirus Among a Sample of a Pakistani Population: A Cross-Sectional Study. *Disaster Medicine and Public Health Preparedness*, 1-6.

Taylor, S., & Asmundson, G.J. (2021). Negative attitudes about facemasks during the COVID-19 pandemic: The dual importance of perceived ineffectiveness and psychological reactance. *Plos one*, *16*(2), e0246317.

Tenenhaus, M., Vinzi, V.E., Chatelin, Y.M., & Lauro, C. (2005). PLS path modeling. *Computational statistics & data analysis*, *48*(1), 159-205

Tervonen, T., Jimenez-Moreno, A.C., Krucien, N., Gelhorn, H., Marsh, K., & Heidenreich, S. (2021). Willingness to wait for a vaccine against COVID-19: results of a preference survey. *The Patient-Patient-Centered Outcomes Research*, *14*(3), 373-377.

Tonglet, M. Phillips, P.S Read, A.D. (2004) Using the theory of Planned Behaviour to investigate the the determinants of recycling behaviour , a case study from Brixworth. UK. Resour, Concert Recycl 4, 191-214.

Towse, A., & Firth, I. (2020). *" How should the world pay for a COVID-19 vaccine?"-Draft Lecture Paper*. Office of Health Economics.

Vandermeulen, C., Roelants, M., Theeten, H., Van Damme, P., & Hoppenbrouwers, K. (2008).Vaccination coverage and sociodemographic determinants of measles–mumps–rubella vaccination in three different age groups. *European journal of pediatrics*, *167*(10), 1161.

Wagner, A.L., Masters, N.B., Domek, G.J., Mathew, J.L., Sun, X., Asturias, E.J., & Boulton, M.L. (2019). Comparisons of vaccine hesitancy across five low-and middle-income countries. *Vaccines*, *7*(4), 155.

Wilson, S.L., & Wiysonge, C. (2020). Social media and vaccine hesitancy. *BMJ Global Health*, *5*(10), e004206.

World Health Organization. (2015). *World health statistics 2015*. World Health Organization.

Xu, H., Mendez, M.J.G., Guo, L., Chen, Q., Zheng, L., Chen, P., & Qiao, Y. (2020). Knowledge, awareness, and attitudes relating to the COVID-19 pandemic among different populations in central china: cross-sectional survey. *Journal of medical Internet research*, *22*(10), e22628.

Yu, Y., Lau, J.T., Lau, M., Wong, M., & Chan, P.K. (2021). Understanding the prevalence and associated factors of behavioral intention of COVID-19 vaccination under specific scenarios combining effectiveness, safety, and cost in the Hong Kong Chinese general population. *International Journal of Health Policy and Management*.

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