

# The Effect of Trust in Politicians and Perceptions of Macro Control on Attitudes towards Vaccines During the Covid-19 Pandemic Process

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## ABSTRACT

**Objective:** The purpose of this study is to investigate the effect of trust in politicians and perceptions of macro control on positive and negative attitudes towards vaccines during the Covid-19 pandemic process.

**Method:** This is a cross-sectional field study. In the research, convenience sampling and snowball sampling methods were used together. 1198 Turkish citizens at the age of 18 and over filled out an online questionnaire between May 6 and June 6, 2021. The questionnaire form consists of the scales of Trust in Politicians, Perception of Pandemic Macro Control, Attitudes towards Vaccines in addition to the demographic variables. In the analysis of the data, frequency, reliability, correlation, and regression analyzes were performed using the SPSS V.26 program, respectively.

**Results:** Trust in politicians during the pandemic process has a statistically significant and positive effect on the perception of pandemic macro control. While trust in politicians and perception of pandemic macro control have a statistically significant and positive effect on positive attitude towards vaccines, they have a negative effect on a negative attitude towards vaccines.

**Conclusion:** It was concluded that the trust in politicians and the perception of the adequacy of macro control measures taken by governments play an important role in people's adopting a positive attitude towards the developed vaccines to fight against the Covid-19, which has turned into a global pandemic.

**Keywords:** Trust in Politicians, Perception of Pandemic Macro Control, Attitudes towards Vaccines

## Covid-19 Pandemisi Sürecinde Politikacılara Duyulan Güven ve Makro Kontrol Algılarının Aşıya Karşı Tutum Üzerine Etkisi

### ÖZET

**Amaç:** Bu araştırmanın amacı, Covid-19 pandemisi sürecinde politikacılara duyulan güven ve makro kontrol algılarının aşıya karşı olumlu ve olumsuz tutum üzerine etkisinin incelenmesidir.

**Yöntem:** Araştırma kesitsel tipte bir saha araştırmasıdır. Araştırmada kolayda örnekleme ve kartopu örnekleme yöntemleri birlikte kullanılmıştır. 6 Mayıs-6 Haziran 2021 tarihleri arasında 18 yaş ve üzeri 1198 Türk vatandaşı çevrimiçi bir anket doldurmuştur. Anket formu demografik değişkenlerin yanısıra Politikacılara Güven, Salgın Makro Kontrol Algısı, Aşıya Karşı Tutum ölçeklerinden oluşmaktadır. Verilerin analizinde, SPSS V.26 programı kullanılarak sırasıyla frekans, güvenilirlik, korelasyon ve regresyon analizleri yapılmıştır.

**Bulgular:** Pandemi sürecinde politikacılara yönelik güven, salgın makro kontrol algısını istatistiksel olarak anlamlı ve pozitif yönde etkilemektedir. Politikacılara güven ve salgın makro kontrol algısı aşıya karşı olumlu tutumu istatistiksel olarak anlamlı ve pozitif yönde etkilerken aşıya karşı olumsuz tutumu negatif yönde etkilemektedir.

**Sonuç:** Küresel bir salgına dönüşen Covid-19 ile mücadele etmek için bireylerin geliştirilen aşıya karşı olumlu tutum benimsemesinde politikacılara duyulan güven ve hükümetler tarafından alınan makro kontrol önlemlerinin yeterliliğine yönelik algı önemli rol oynadığı sonucuna ulaşılmıştır.

**Keywords:** Politikacılara Güven, Salgın Makro Kontrol Algısı, Aşıya Karşı Tutum

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The whole world is under the threat of the Severe Acute Respiratory Syndrome Coronavirus 2 -SARS-COV-2- (Covid-19) pandemic since the end of 2019. In line with the statements of the World Health Organization (WHO) that reducing the effect of Covid-19 should be a top priority for governments, most countries are taking strict measures to slow down the spread of the disease. The main measures taken are mask-social distancing-hygiene rule, implementation of movement restrictions in social and economic sectors, lockdown practices, avoiding travel unless it is necessary, curfews, distance education and work, flexible working hours and widespread vaccination (1, 2, 3, 4, 5).

Covid-19 pandemic is perceived as a real threat by individuals as it limits their perception of personal control and risks the lives of themselves and their beloved ones (6). High risk and realization of the threat direct people to adhere to the measures taken by governments during the process of the fight with pandemics (7, 8). In other words, when people feel that they have lost their control on their own lives, they tend to adapt to the macro measures to satisfy their needs (9). In the pandemic period when personal control is insufficient, people's perceptions of trust in resources such as government and health authorities, which are expected to provide macro control, are important in terms of adapting to measures in the fight against the pandemic (10).

In addition to personal and macro measures within the fight against infectious diseases, vaccination rates and immunity level of the communities play important role to take the disease under control (11). According to WHO data, 2-3 million deaths due to infectious diseases are prevented each year thanks to vaccination (12). The WHO carries out validity and reliability studies in order to take the Covid-19 pandemic under control through vaccination and emphasizes that vaccination is crucial to end the Covid-19 pandemic. In this context, it was announced by the WHO that as of June 3, 2021, Sinovac, Pfizer/BionTech, AstraZeneca/Oxford vaccines, Johnson and Johnson, Moderna and Sinopharm vaccines meet the criteria for safety and effectiveness (13). Sinovac and Biontech vaccines are applied in Turkey as the Covid-19 vaccines (14).

Although vaccination is important in controlling pandemics, for many reasons such as distrust in health system components, attitudes towards healthcare professionals, distrust in pharmaceutical companies, belief that vaccine content is harmful, lack of information about the

effectiveness of vaccines, negative information in the media, possible future side effects of vaccines, concerns about the effects of vaccines, attitudes of families towards vaccines, fear of vaccines, etc., people have negative attitudes towards vaccines such as vaccine hesitancy, reluctance to be vaccinated, and vaccine rejection (15, 16, 17, 18, 19, 20).

Despite studies on vaccination, the pandemic keeps spreading and the number of deaths increases day by day. Despite the deadly consequences of the Covid-19 disease, people's avoidance from vaccination negatively affects the success of the fight against the pandemic. Therefore, it becomes important to investigate the factors that affect people's attitudes towards vaccines. In this context, the purpose of this study is to determine the effect of trust in politicians and macro control perceptions on the attitude towards vaccines.

## METHODS

### *Study Design and Participants*

This study is a cross-sectional field study designed in descriptive-relational type. The population of the study consists of individuals aged 18 and over who are citizens of the Republic of Turkey. In the study, convenience sampling and snowball sampling methods were used together. An online questionnaire, created on Google Forms, was sent to approximately 2,000 people who voluntarily agreed to participate in the study. In addition, the participants were asked to share the questionnaire form with other people over the age of 18. The study data were collected from 1321 participants from 81 provinces of Turkey in a one-month period between May 6 and June 6, 2021. The data of 87 participants who gave wrong answers to the control question and 36 participants who marked all statements in the scales with the same agreement level were excluded from the analysis. Therefore, the data from 1198 participants were analyzed in the study.

### *Measures*

The questionnaire form consists of the scales of Trust in Politicians, Perception of Pandemic Macro Control, Adherence to Measures, Attitudes towards Vaccines in addition to the demographic variables. There are 8 questions about the demographic features of the participants. The scale of Trust in Politicians was developed by Boukes and Boomgaarden (2016). In the scale, there are 10 statements under one dimension for honesty and reliability of politicians. There are 5 reverse coded statements in the scale. Cronbach's Alpha (Ca) coefficient of the scale is 0.87 (21). The scale of Pandemic Macro Control Perception was

developed by Çirakoğlu (2011) for H1N1 virus. There are 5 statements in the scale.  $\alpha$  coefficient of the scale is 0.83 (22). The scale in question was adapted for Covid-19 in this study. The Scale of Attitudes towards Vaccines was developed by Çirakoğlu (2021). The scale developed in order to measure positive and negative attitudes of the participants towards vaccines consists of 9 statements in two sub-dimensions. There are 4 statements in the dimension of positive attitude towards vaccines.  $\alpha$  coefficient of this sub-dimension is 0.85. There are 5 statements in the dimension of negative attitude towards vaccines and all of these statements are reverse coded.  $\alpha$  coefficient of this sub-dimension is 0.67 (22). The scale was adapted for Covid-19 in this study. All scales in the study were used as 5-point Likert scale.

### Data Analysis

In the analysis of the data, frequency analysis, reliability analysis, correlation analysis and regression analysis were performed using SPSS V.26 program, respectively.  $\alpha > 0.70$  was accepted as the reliability of the scales used in the study (23). Skewness and Kurtosis values ( $\pm 1,500$ ) were taken into account in normality hypothesis of the data (24). In the evaluation of the findings,  $< 0.05$  significance level and 95% of trust frequency were accepted.

### Ethical Considerations

Before starting the research, approved by the Usak University Social and Human Sciences Scientific Research and Publication Ethics Committee with the decision of 2021/96 dated 06.05.2021. Additionally, before starting the online questionnaire, the participants confirmed that they voluntarily participated in the study after reading the information about the purpose of the study and the fact that the data to be collected will be used only for scientific purposes and their personal information will be kept confidential.

## RESULTS

The descriptive statistics of the individuals participating in the study are summarized in Table 1.

1198 individuals aged 18 and over from 81 provinces of Turkey participated in the study. 56.2% of the participants are female and 43.8% are male. Considering the marital status of the participants, 60.1% are married and 39.9% are single. 59.9% of the participants are between the ages of 18-29 and their age average is  $29.47 \pm 10.02$ . 65.4% of the participants are university graduates. 30.2% of the participants are students (Table 1).

Variable		N	%
Gender	Female	673	56.2
	Male	525	43.8
Marital Status	Married	478	60.1
	Non-Married	720	39.9
Age Min= 18 Max= 78 Mean= 29.47 Sd=10.02	18-29	718	59.9
	30-39	268	22.4
	40-49	150	12.5
	50-59	51	4.3
	60 and above	11	0.9
Educational Status	Primary education	78	6.5
	High school	171	14.3
	University	784	65.4
	Master	120	10.0
	Doctorate	45	3.8
Profession	Student	362	30.2
	Public personnel	189	15.8
	Private sector employee	148	12.4
	Health personnel	105	8.8
	Entrepreneur	86	7.2
	Teacher	71	5.9
	Public worker	65	5.4
	Academician	59	4.9
	Housewife	52	4.3
	Unemployed	43	3.6
	Retired	18	1.5
<b>Total</b>		<b>1198</b>	<b>100</b>

Descriptive statistics regarding the scales used in the study are presented in Table 2. The average of the scale of trust in politicians is  $2.26 \pm 0.922$ , the average of the scale of pandemic macro control is  $2.69 \pm 0.935$ , the average of the positive attitude towards the vaccine is  $3.23 \pm 1.271$ , and the average of the negative attitude towards the vaccines is  $2.26 \pm 0.889$ . Since the Skewness and Kurtosis values of the scales in the study were between -1.004 and 0.456, it was accepted that the research data had a normal distribution. Since the Cronbach's Alpha coefficient of all scales used in the study was  $\alpha > 0.70$ , the scales were accepted as reliable (Table 2).

Scale	Min	Max	Mean	Sd	Skewness	Kurtosis	Cronbach's Alpha ( $\alpha$ )
Trust in Politicians	1.00	5.00	2.26	.922	.456	-.223	.891
Perception of Pandemic Macro Control	1.00	5.00	2.69	.935	.218	-.539	.824
Positive attitude towards the vaccine	1.00	5.00	3.23	1.271	-.261	-1.004	.937
Negative attitude towards the vaccine	1.00	5.00	2.69	.889	.339	-.013	.790

Results of correlation analysis performed in order to determine the correlation between variables are presented in Table 3.

While there exists a statistically significant, positive, linear and poor correlation between the trust in politician variable and pandemic macro control perception ( $r = 0.482$ ,  $p < 0.001$ ), positive attitude towards vaccines ( $r = 0.269$ ,  $p < 0.001$ ), there exists a statistically significant, negative, linear and poor correlation with negative attitude towards vaccines ( $r = -0.230$ ,  $p < 0.001$ ). While there exists a statistically significant, positive, linear and poor correlation between pandemic macro control perception variable and positive attitude towards vaccines ( $r = 0.411$ ,  $p < 0.001$ ) variables, there exists a statistically significant, negative, linear and poor correlation with negative attitude towards vaccines ( $r = -0.307$ ,  $p < 0.001$ ).

In accordance with the purpose of the study, 3 different regression model was established. Enter mode was used in regression analysis. Correlation value ( $r = 0.482$ ) between the independent variables of the study is smaller than 0.7. In addition, Variance Inflation Factor (VIF) value ( $VIF = 1.302$ ) is smaller than 10 and tolerance value (Tolerance = 0.768) is larger than 0.10 in multiple linear regression analyses performed in the study. It was determined that these values are acceptable and there is no multicollinearity problem in existing sample (25). Results of the relevant regression analyses are presented in Table 4 and Table 5.

Variables		1	2	3	4	
1	Trust in Politicians	Pearson Correlation	1			
		Sig.	0.001			
2	Perception of Pandemic Macro Control	Pearson Correlation	0.482	1		
		Sig.	0.001			
3	Positive attitude towards the vaccine	Pearson Correlation	0.269	0.411	1	
		Sig.	0.001	0.001		
4	Negative attitude towards the vaccine	Pearson Correlation	-0.230	-0.307	-0.573	1
		Sig.	0.001	0.001	0.001	

Dependent variables	Independent variables	B	SE	$\beta$	t	p
Perception of Pandemic Macro Control (1)	Costant	1.589	.063		25.343	.001
	Trust in Politicians	.488	.026	.482	19.002	.001
	$R = .482$ ; $R^2 = .232$ ; $F = 361.069$ ( $p = .001$ )					

Table 5. The Result of the Regression Analysis on the Effect of Trust in Politicians and the Perception of Pandemic Macro Control on Attitudes Towards Vaccines.

Dependent variables	Independent variables	B	SE	$\beta$	t	p
Positive attitude towards the vaccine (2)	Costant	1.598	.110		14.558	.001
	Trust in Politicians	.128	.041	.092	3.086	.002
	Perception of Pandemic Macro Control	.499	.041	.367	12.244	.001
	$R = .419; R^2 = .176; F = 127.465 (p = .001); Tolarence = .768; VIF = 1.302$					
Negative attitude towards the vaccine (3)	Costant	3.579	.080		44.780	.001
	Trust in Politicians	-.103	.030	-.107	3.408	.001
	Perception of Pandemic Macro Control	-.244	.030	-.256	8.197	.001
	$R = .321; R^2 = .103; F = 68.804 (p = .001); Tolarence = .768; VIF = 1.302$					

The regression model established for the effect of trust in politicians variable on the perception of pandemic macro control variable is statistically significant ( $F = 361.069$ ,  $p < 0.001$ ). According to simple linear regression model, it was determined that trust in politicians variable has a statistically significant and positive effect on the perception of pandemic macro control ( $\beta = 0.488$ ,  $p < 0.001$ ) variable. Trust in politicians variable can explain 23.2% of the change in the perception of pandemic macro control variable ( $R^2 = 0.232$ ).

The regression model established for the effect of trust in politicians and perception of pandemic macro control variables on positive attitude towards vaccines variable is statistically significant ( $F = 127.465$ ,  $p < 0.001$ ). According to multi linear regression model, trust in politician ( $\beta = 0.092$ ,  $p < 0.002$ ) and perception of pandemic macro control ( $\beta = 0.367$ ,  $p < 0.001$ ) variables have a statistically significant and positive effect on positive attitude towards vaccines variable. Trust in politicians and perception of pandemic macro control variables can explain 17.6% of the change in positive attitude towards vaccines variable, which is a dependent variable ( $R^2 = 0.176$ ).

The regression model established for the effect of trust in politicians and perception of pandemic macro control variables on negative attitude towards vaccines variable is statistically significant ( $F = 68.804$ ,  $p < 0.001$ ). According to multi linear regression model, trust in politicians ( $\beta = -0.107$ ,  $p < 0.001$ ) and perception of pandemic macro control ( $\beta = -0.256$ ,  $p < 0.001$ ) variables have a statistically significant and negative effect on negative attitude towards vaccines variable. Trust in politicians and perception of pandemic macro control variables can explain 10.3% of the change in negative attitude towards vaccines variable, which is a dependent variable ( $R^2 = 0.103$ ).

## DISCUSSION

With the emergence of new virus variants during the Covid-19 pandemic process, there is a rise in the number of cases again and the course of the disease also changes. For that reason, the need for measures against the virus and the importance of these measures gradually increases. In addition to the measures, one of the biggest trump cards in the hands of human beings in the fight against the pandemic is considered to be vaccination and ensuring social immunity. Although there is an increase in the positive approach towards vaccines and vaccination in Turkey and in the world, negative attitudes and anti-vaccination still stand as an obstacle to social immunity. In this process, it is inevitable that macro control perceptions of individuals towards the pandemic and the trust in politicians who are in the decisive position in the health policies of the countries will have an effect on the attitudes towards vaccines. In this context, the purpose of this study is to investigate the effect of trust in politicians and perception of macro control during the Covid-19 pandemic process on positive and negative attitudes towards vaccines.

The first finding of the study is that as the level of trust of the participants in politicians and policy makers increases, the perception of macro control towards pandemic increases as well. Similarly, it was determined in a study conducted in Norway and Sweden in early periods of the pandemic that participants highly trust in governments and health services and believe that the decisions for macro measures about the pandemic are based on scientific evidences (26). Low levels of trust in political decision makers lead to the development of perceptions of lack of macro control and individuals to find ways to protect their own interests autonomously (27). According to this finding of the study and the current literature, individuals' feelings of trust in politicians during the pandemic process positively affect their perceptions of the adequacy of macro control measures regarding the pandemic.

The final finding of the study is that the increase in the participants' trust in politicians and the adequacy of the macro control measures taken for the epidemic has a statistically significant positive effect on the positive attitude towards the vaccines and a statistically significant negative effect on the negative attitude towards the vaccines. Similar to this finding of the study, it was concluded in a study by Lazarus et al. (2020) individuals' trust in information from the sources of governments has a positive effect on vaccination (28). In a study by Quinn et al. (2016) it was determined that trust in government has a positive effect on positive attitude towards vaccines (29). Baumgaertner, Carlisle, and Justwan (2018) stated in their study on pertussis, measles and flu vaccines that ideological and political views, and therefore the trust in politicians, who correspond to these views, affect attitudes towards vaccines. In the concerning study, it was determined that the attitude of the politicians whom the participants trust towards vaccines causes the individuals to adopt a positive or negative attitude towards vaccines (30). Likewise, in the study by Fridman, Gershon and Gneezy (2021) it was confirmed that this is also valid for the Covid-19 vaccine and other types of vaccines (31). In the study by Criss et al. (2021), in which the tweets of Twitter users in the USA during the Covid-19 period were examined, it was seen that the attitudes of politicians and the trust in them had an effect on the anti-vaccination and attitude towards vaccines (32). Therefore, it is possible to say that the increase in the level of trust in ideological figures, governments and politicians, who are the representatives of these political structures, has a positive effect on the positive attitude towards vaccines.

## CONCLUSION

The Covid-19 pandemic continues to spread despite individual, organizational, national, and international measures and efforts to expand vaccination studies. As the pandemic continues, the number of infected patients and deaths due to the Covid-19 increase. That being said, due to the fact that some people hesitate about vaccination, fear of vaccination and refusal to be vaccinated negatively affect the success of the fight against the pandemic. Therefore, investigating the factors that affect people's attitudes towards vaccines is important for the success of the fight against the pandemic.

It was concluded in the study that individuals' trust in politicians and their perceptions of the adequacy of the macro control measures regarding the pandemic contributed to their positive attitudes towards vaccines. In addition,

trust in politicians and perception of macro control reduce negative attitudes towards vaccines. In the context of the results obtained in the research, it can be said that it is important to develop the feeling of trust of the society towards policy makers and health-related authorities in the fight against the Covid-19 pandemic. In order to gain the trust of the society and fight with the pandemic, politicians and health authorities should share accurate and up-to-date information transparently, explain the measures with their scientific sources, quickly eliminate the environment of uncertainty and misinformation, ensure unity by leaving political concerns and conflicts aside, and provide consistent messages to the society and people should be provided with access to information resources. In addition, in the pandemic process where individual control is insufficient, it is necessary to raise awareness of the society, to create a social unity for trying to adhere to macro measures, and to ensure that individuals develop a positive attitude towards the Covid-19 vaccines. It was concluded in the study that it is important for politicians to create a feeling of trust in the success of the fight against the Covid-19 and to improve the perceptions of the society about the adequacy of the macro control measures based on science-related to the pandemic.

This study has some limitations as in all other ones. First, the study limits the generalization of the results as it was designed as cross-sectional and a convenience sampling method was used. A second limitation is the small number of participants aged 60 and over and retired in the sampling of the study. Future studies may focus on people over 60 and retired. A third limitation is the small number of participants infected and vaccinated with Covid-19, as the study was conducted during the early stages of vaccine administration. With the widespread vaccination, it is thought that examining the attitudes of those who are vaccinated and those who are not and their behavior to adhere to measures will make a significant contribution to the literature. Finally, it can be recommended to investigate different factors that affect attitudes towards vaccines for future studies.

## DECLARATIONS

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