Perceived coronavirus health risk associated with students’ life satisfaction: the role of trust in government policies

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Abstract This study investigates whether trust in government policies has a mediation effect between the students’ perception of COVID-19 health risk and their life satisfaction. In order to test the mediation effect, this study utilizes data collected from undergraduate students at Tecnológico de Monterrey in Mexico by means of online survey. The survey yielded 95 usable data out of 97. The valid results were tested via generalized linear model (GLM) Mediation approach for the mediation. Empirical findings of Delta method affirm the mediation (estimate = 0.4445, β = 0.474, z = 3.699, p < .001) role of trust in government as a mediator between students’ perception of COVID-19 health risk and their life satisfaction. In other words, Mexican undergraduate students are of the view that trusting government plays a crucial role as a mediator between their perception of coronavirus health risk and life satisfaction. These findings may guide the governments’ policy making efforts and motivate them to support their initiatives with trust-building efforts.

Key words COVID-19, Educational innovation, Health risk, Higher education, Life satisfaction, Trust in government policies

Resumo Este estudo investiga se a confiança nas políticas governamentais tem um efeito de mediação na percepção dos estudantes sobre o risco de saúde da COVID-19 e a satisfação de vida. A fim de testar o efeito de mediação, o estudo utiliza dados recolhidos de estudantes universitários do Tecnológico de Monterrey, no México. O inquérito produziu 95 dados utilizáveis de um total de 97. Os resultados válidos foram testados por meio da abordagem de mediação do modelo linear generalizado (GLM). Os resultados empíricos do método Delta afirmam (estimativa = 0.4445, β = 0.474, z = 3.699, p < .001) o papel de confiança no governo como mediador entre a percepção dos estudantes sobre o risco de saúde da COVID-19 e sua satisfação de vida. Em outras palavras, mexicanos estudantes de graduação acreditam que confiar no governo desempenha um papel crucial como mediador entre suas percepções sobre o risco de saúde do coronavírus e a satisfação de vida. As conclusões do estudo podem orientar os esforços dos governos na elaboração de políticas e motivá-los a apoiar iniciativas de criação de confiança.

Palavras-chave COVID-19, Inovação educacional, Risco de saúde, Ensino superior, Satisfação de vida, Confiança nas políticas governamentais

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Introduction

Since the first coronavirus cases started, governments have been trying to mitigate the effects of the outbreak. While some regimes follow strict restrictions and implement isolation measures, others prefer to use alternative methods like smart lockdowns and socio-economic programs following the medical advisory boards’ recommendations and international organizations such as World Health Organization\(^1,2\). Despite these efforts, the success of preventative measures highly depends on how societies perceive fairness of policy making, trust in institutions, perceived health risk, and consequences of these initiatives in their life satisfaction. If citizens of a country trust the reasoning behind policy implementations, they postulate them as improvement in their health safety and overall life satisfaction\(^3\).

On the contrary, if stringent policy making couples with public distrust in a government, the citizens of countries may consider government interventions as hostile\(^4\). This leads to a negative impact on perception of life satisfaction and increase the magnitude of the public distrust in government even further\(^5\). For instance, studies conducted after H1N1 pandemic at Switzerland illustrate that initially Swiss population displayed high trust on the government legislations; however, the trust level sharply declined over the time due to the discrepancies between promised effects by government and end result of the implemented policies\(^6,7\). A systematic literature review conducted on H1N1 reports that In most countries, perceived vulnerability increased, but perceived severity, anxiety, self-efficacy, and vaccination intention decreased\(^8\). This highlights that there is a strong link between trust in government policies and life satisfaction.

Another critical aspect of crisis management is the magnitude of perceived health risk. How people assert their risk perception can affect their trust in and content with institutions and governments\(^9\). The behavioral response to the crisis is linked to the perception of risk related to the adverse impact of that specific crisis. In times of major disasters and health crisis, people tend to accept higher degree of restrictive policy implementations while, if the risk perception is low, the vice-a-versa is valid\(^10,11\). Thus, it is essential to investigate the trust in government dealings and the perceived risk among citizens during a health crisis.

With the emergence of COVID-19, there is a growing body of literature that addresses the aforementioned relationship. Although initial studies report that there is a correlation between trust in government departments and agencies and government policies\(^12,13\), majority of these studies are focused on advanced country settings and investigate the topic through the general public lenses. So far, there is limited numbers of studies that concerning of a particular group of population and how aforementioned dynamics work within that group. For instance, Lambovska et al.\(^14\) mention in their recent study that the rate of unemployment among European Union (EU) member countries’ young population (25 years of age or younger) have gone up due to adverse effects of COVID-19. Similarly, Palmer and Small\(^15\) indicate that COVID-19 has further burdened youth (age 18 to 29) in terms of their economic responsibilities and healthcare related expenditures. Both studies further highlight the importance of government policy implementations for protection of the young population, since they are accounting for nearly one fourth of the total world’s population.

Motivated to contribute to the mentioned literature gaps, this study aims to investigate university student’s perception on how government policies affect their life satisfaction associated with perceived coronavirus health risk in Mexico. The reason why students are chosen is due to lack of studies that targets them as a subset of young generations. Also, it is important to highlight that Mexico is the only emerging market country in the North America region. Therefore, students who are in Mexico provides a unique setting for this study.

Background and hypotheses development

Perceived coronavirus health risk and life satisfaction

Life satisfaction of an individual is determined by the perception of their environment and intuitive risk assessment within that environment\(^16,17\). Based on their risk perceptions, individuals adjust their behavior in such a way that they can avoid potential adverse effects of risk factors and can increase their perceived life satisfaction\(^18\). While this dynamic is thought to be executed based on facts as well as rational deliberations\(^19\), social-cognition literature reveals that being exposed to misinformation (optimistic or pessimistic) that is closer to an individual’s own belief or solely relying on one’s own observa-
tion can sway the ability to assess the risk\textsuperscript{20-22}. A given group of people, as a result of the subjectivity, may perceive their life satisfaction higher or lower than other groups in the given society when facing the same adverse situation\textsuperscript{23}. Literature provides mixed results regarding this issue. In some cases, there may not even be a perceived risk at a given health crisis; therefore, no change in terms of life satisfaction can possibly be observed\textsuperscript{24}. Based on the above discussion, this study proposes the following hypothesis – \( H_1 \): Students’ perceived coronavirus health risk affects their perception of life satisfaction.

**Perceived coronavirus health risk and trust in government policies**

Recent published research in the Bulletin of the World Health Organization highlights that one of the main influencers of risk perception during COVID-19 crisis is the public relations and trust in government\textsuperscript{25}. This is due to citizens of countries’ dependence on reliable information dissemination on the current events, health system’s effectiveness, and the potential nationwide action plans\textsuperscript{26}. Failing to answer these needs and delaying taking action to curb the negativities born due to COVID-19 for the sake of political narratives increases the distrust in institutions, legislations, and overall government dealings\textsuperscript{27,28}. On the other hand, there are research works indicating that government’s ability to match with public’s opinion on how severe the crisis is and to implement measures that could counterbalance the negativities of COVID-19 boost the public trust towards government policies\textsuperscript{30,31}. As a result, the perceived health risk decreases and citizens’ attitude towards risk level at a given country drops and they go back to their pre-pandemic daily routines\textsuperscript{32,33}.

The emerging research, however, reveals a different path of interaction. It suggests that the higher risk perception of health could mean lower levels of trust in the government policies\textsuperscript{34,35}. Simply, the higher potential of the riskiness could be perceived by the citizens as ineffective policy making. The higher perceived risk, therefore, requires more impactful government policymaking to recover trust in government policies\textsuperscript{36}. Similarly, false claims by the unaccountable news outlets and word of mouth could create higher perception of risk and lower the level of trust in government\textsuperscript{37}. False information and distorted claims by plethora of news mediums could fuel the overestimate of the seriousness of the pandemic while fostering conspiracy theories to reduce trust in government and policy-making process in a given country\textsuperscript{38}. Based on the above discussion, this study proposes the following hypothesis – \( H_2 \): Perceived coronavirus health risk affects students’ trust in government policies.

**Trust in government policies and life satisfaction**

Trust in government and its influence on the life satisfaction level has been long investigated in social sciences. Frey and Stutzer\textsuperscript{39}, in their seminal work, highlight that there is a strong evidence on the influence of government policies over life satisfaction. Their contemporaries also provide supporting evidence that government policies directly impact life dynamics at a given country and society\textsuperscript{40,41}. In alignment with the literature, Yu et al.\textsuperscript{42} find that government policies that are reducing factors of stress in citizens’ livelihood and increasing convenience of their daily dealings would lead to higher life satisfaction compared to antecedent life satisfaction levels. In a similar fashion, Barrafrem et al.\textsuperscript{43} highlight that trust in government policies causes reduction of future anxiety and improves life satisfaction among citizens.

Yet, the impact of the government policies and to what they are welcomed by the citizens in terms of their life satisfaction is significantly related to citizens’ trust in government\textsuperscript{44}. The lower trust in the policy makers would cause negative perception that leads to lower level of life satisfaction\textsuperscript{45}. On the contrary, however, high trust in policymakers does not always translate into ex-ante policymaking life satisfaction perception of citizens\textsuperscript{46}. Due to the dynamic relationship between trust in government policies and life satisfaction, each group and society should be treated as a unique set of observation and investigated separately\textsuperscript{27,46-47}. Based on above discussion, this study proposes the following hypothesis – \( H_3 \): Trust in government policies affects life satisfaction of students.

**Mediating effects of trust in government policies between perception of health risk and life satisfaction**

When large numbers of actors are involved in taking a government motivated action, the extent that individuals’ sense making directly correlated with their own social welfare rather
than societies overall well-being\textsuperscript{46}. If individuals’ cost-benefit calculation reveals the perceived risk is not high enough to follow the policies in the time of an adverse event and they do not trust the government, they simply prefer not to follow preventative guidelines and policies that the government implements\textsuperscript{49}. Their perception towards government interventions shifts from facilitating structure for daily life to hindrance of their livelihood\textsuperscript{46,51}. As a result, publics’ perception on trust in government policies and life satisfaction plummets.

On the contrary, in certain high-risk environments, government interventions may be considered as legitimate. For instance, if a government provides sound reasoning behind its interventions during the crisis, it will build trust among citizens towards implementing policies and reduce the perceived riskiness\textsuperscript{52-55}. Otherwise, government interventions will be linked to corruption and reduce trust in government during crisis\textsuperscript{56,57}. However, there is a limited number of research works that investigates the dynamic mentioned above in COVID-19 settings. It is not clear whether trust in government policies mediate how citizens perceive government actions and link it to their life satisfaction. Hence, based on the provided literature, this paper proposes the following hypothesis – \( H_4 \): Trust in government mediates the relationship between perceived coronavirus health risk perception and life satisfaction among students.

The Figure 1 illustrates the model that is created to investigate and plot the relationship among the “Perceived Coronavirus Health Risk” (PCHR), “Trust in Government Policies” (TGP), and life satisfaction (LS). It accounts for two possible relation investigations among the mentioned variables: direct relation/correlations and mediation-based interactions. The rigor of the model stems from its way of mapping each possible interaction through the lenses of the proposed mediation technique. The next section explains the adopted methodology in detail, followed by the “Analysis and Results” section in which the analysis results are explained thoroughly.

Methodology

Participants and procedure

This research has been conducted using empirical evidence which was collected through online responses of undergraduate students of Tecnológico de Monterrey, Mexico. In order to collect data for this research, we sought help from university Professors for distributing Google form-based online survey links among their students. Professors used a learning management system (LMS) platform, Canvas, to distribute this online survey link. Canvas is currently being utilized as an official LMS platform for both university professors and students. For this research, the data was collected using the convenience sampling technique. The data collection duration was based on the following five weeks, starting from April to the first week of May 2021. Due to the anonymity of the survey, with in alignment with the previous studies, the study is exempt from ethical board approval\textsuperscript{58}.

Within the scope of this study, we received a total of 97 responses via Google Form-based online survey. During data curation, it was found that two responses were incomplete, which were deleted prior to the final analysis of collected data. Therefore, we could only take into account 95 responses as the final analysis of collected data.

Measures

Independent variable: perceived coronavirus health risk

To measure perceived coronavirus health risk (PCHR), we adopted three items from scale developed by Han et al.\textsuperscript{59} The sample questions involved To minimize my chances of getting coronavirus, I wash my hands more often. In order to test the reliability of the scale, Cronbach alpha value was utilized. According to the previous literature, the value of Cronbach alpha values that are exceeding the 0.7 value accepted as reliable scale for the measuring variables\textsuperscript{60,61}. Cronbach alpha, for the independent variable (PCHR) found as 0.94. The test shows that PCHR variable that is employed for this study is reliability.

Mediating variable: trust in government policies

To measure trust in government policies (TGP), three items had been adopted from the developed scale of Han et al.\textsuperscript{59} The sample questions entailed In general, how much do you trust government of your country to take the right measures to deal with the coronavirus pandemic? The reliability and the scale of the variable is validated based on Cronbach alpha test. The value of Cronbach alpha for the variable is determined as 0.91. It shows that the scale to be reliable for the present study\textsuperscript{60,62,63}.


Figure 1. Research model.
Source: Authors.

Dependent variable: life satisfaction
To measure life satisfaction (LS), we adopted four items from developed scales of Phulkerd et al.64 The sample questions included In most ways, my life is close to my ideal and the reliability determined as 0.80. This finding agrees with the Xiong et al.62

Statistical analysis
In order to statistically analyze collected data, we used Jamovi version 1.6.23.0 (Mac OS), an open-access software. During the first step of data analysis, we applied a descriptive technique for gaining initial information of participants like the total number of respondents and percentage with regards to their gender, age, major, enrollment status, and scholarship. In the second step, we applied correlation analysis for checking the existence of a correlation between a set of variables. Lastly, we applied the Generalized Linear Model (GLM) mediation approach, to identify the mediation (indirect and direct) effects of Trust on government policies on the independent variable Perceived coronavirus health risk and dependent variable i.e., Life satisfaction, and also total effects between both dependent and independent variable.

Analysis and results
Descriptive analysis
The demographic information of respondents is based on counts and percentages with different levels such as age, gender, specialization, and scholarship. Age-wise distribution of respondents was 26 students (27.4%) between 18 to 20 years, 62 respondents (65.3%) between 21 to 22 years, and remaining 7 respondents were above 23 years (7.4%). Most responses were received from male students i.e., 64 (67.4%), and the remaining 31 were female respondents (32.6%). Specialization-wise 58 (61.1%) respondents were from Management and Social Sciences, 31 (32.6%) respondents from Engineering, and remaining 6 from Natural Sciences (6.3%). 55 (57.9%) respondents were studying without a scholarship, and the remaining 40 (42.1%) respondents held scholarships (Table 1).

Correlation analysis
For correlation analysis, we applied Pearson’s r test to explore the correlation existing among independent (PCHR), mediation (TGP), and dependent (LS) variables. It is demonstrated by analyzed results in Table 1 that a significant correlation exists between sets of variables. PCHR is significantly and positively correlated with LS ($r = .474$, $p < 0.001$). Analyzed results also confirm that a significantly positive correlation exists between PCHR and TGP ($r = .877$, $p < 0.001$), and TGP and LS ($r = .569$, $p < 0.001$) (Table 2).

Hypotheses testing
GLM Mediation analysis technique was used to test the hypotheses based on relationships represented in the research model. The technique was used by employing the “medmod” module...
of Jamovi software. Table 3 illustrates the findings of our results. It is indicated by the analyzed result that our first hypothesis \( H_1 \): Students’ perceived coronavirus health risk affects their perception of life satisfaction is supported (\( \beta = 0.474, p < 0.001 \)).

\( H_2 \): Perceived coronavirus health risk affects students’ trust in government policies (\( \beta = 0.887, p < 0.001 \)) and \( H_3 \): Trust in government policies affects life satisfaction of students (\( \beta = 0.662, p < 0.001 \)) are supported respectively.

It is also revealed by Table 3 that trust in government policies mediates the relationship between PCHR and LS because no zero value exists between Lower and Upper Confidence Intervals, also the Delta method affirms mediation (estimate = 0.4445, \( \beta = 0.474, z = 3.699, p < .001 \)). Hence, hypothesis \( H_4 \) has been supported as well i.e., Trust in government mediates the relationship between coronavirus health risk perception and life satisfaction among students. After the mediator’s introduction, the relationship between the dependent and independent variable has been modified from significant to insignificant such as significant total effects were modified insignificant direct effects. It has been affirmed through our analyzed results that the research model has full mediation.

### Discussion

According to the previous literature, mixed results of government efforts in mitigating the negative effects of public health crises might be due to the varying levels of societies’ trust in governments\(^3\,^4\). While high public trust in government significantly increases the compliance with restrictions and preventative measures\(^6\,^5\), distrust in government limits the outcomes of the of government responses to COVID-19\(^6\,^6\).

This study demonstrates a correlation between perceived coronavirus health risk and life satisfaction, perceived coronavirus health risk and trust in government policies, as well as trust in government policies and life satisfaction. This analysis supports the argument that trust in gov-

### Table 1. Demographic information.

| Age          | n  | %  |
|--------------|----|----|
| 18 to 20 years | 26 | 27.4% |
| 21 to 22 years | 62 | 65.3% |
| Above 23 years | 7  | 7.4% |
| Gender       |    |    |
| Male         | 64 | 67.4% |
| Female       | 31 | 32.6% |
| Specialization |  |    |
| Natural sciences | 6 | 6.3% |
| Engineering  | 31 | 32.6% |
| Management and social sciences | 58 | 61.1% |
| Scholarship  |    |    |
| Yes          | 40 | 42.1% |
| No           | 55 | 57.9% |

Note: “n” stands for sample population number; “%” refers to percentage.

Source: Authors.

| Table 2. Correlation analysis. |
|-------------------------------|
| PCHR Pearson's r — (0.94)    |
| TGP Pearson's r 0.877* — (0.91) |
| LS Pearson's r 0.474* 0.569* — (0.80) |

* p < .001; PCHR = perceived coronavirus health risk; TGP: trust in government policies; LS = life satisfaction.

Note: Cronbach alpha values are presented in parenthesis.

Source: Authors.

### Table 3. Indirect and total effects (mediation).

| Type      | Effects | Estimate | SE  | 95% CI | \( \beta \) | z   | p    |
|-----------|---------|----------|-----|--------|------------|-----|------|
| Indirect  | PCHR → TGP → LS | 0.4445 | 0.1202 | 0.209 - 0.680 | 0.580 | 3.699 | < .001 |
| Component | PCHR → TGP   | 0.8703 | 0.0490 | 0.774 - 0.966 | 0.877 | 17.746 | < .001 |
|           | TGP → LS    | 0.5107 | 0.1351 | 0.246 - 0.775 | 0.662 | 3.782 | < .001 |
| Direct    | PCHR → LS   | -0.0809 | 0.1341 | -0.344 - 0.182 | -0.106 | -0.603 | 0.546 |
| Total     | PCHR → LS   | 0.3636 | 0.0696 | 0.227 - 0.500 | 0.474 | 5.223 | < .001 |

Note: confidence intervals (CI) computed with method: Standard (Delta method); Betas (\( \beta \)) are completely standardized effect sizes; PCHR = perceived coronavirus health risk; TGP = trust on government policies; LS = life satisfaction.

Source: Authors.
ernment policies has a mediation effect on the relation between people's perception of health risk and their life satisfaction. The data confirms that trust in government policies is a mediating variable, accounting for the relationship between the perception of COVID-19 health risk among the students who took the survey and their life satisfaction.

Furthermore, the perceived coronavirus health risk is correlated with trust in government's policies. In line with the hypothesis, the results show that the students' perceived health risk associated with the coronavirus affects their level of trust in government policies. Our results support the findings of the contemporary research such as Edelman which shows a record rise in trust in government among the 11 studied countries during the COVID-19 pandemic. Our study agrees with the previous literature that the potential riskiness of a health crisis would influence the perception of citizens about effectiveness of government's policy making and implementation. The findings of this study also emphasize the importance of ethical media and transparency of information. As Kim and Kim, and Melki et al. suggested, false claims and distorted information by unaccountable news mediums could alter the perception of risk and affect the trust in the government and their policy-making process.

However, according to our results, the extent that the government policies are welcomed by the citizens in terms of their life satisfaction is related to people's trust in government. This is in line with the statement of Hetherington and Husser, and Barrafrem et al. that if citizens trust the reasoning behind policy implementations by government, they consider them as improvement in their health safety and life satisfaction.

Finally, results further supplement the perspective on the relevance of trust in government policies as a mediator variable between perceived coronavirus health risk and life satisfaction. After the introduction of trust in government policies, the relationship between the perceived coronavirus health risk and life satisfaction was modified from significant to insignificant. Therefore, trust in government policies fully mediates the effect of perceived health risk on life satisfaction.

Conclusion

Recently, perceived coronavirus health risk presented a unique challenge for all governments. In order to tackle this challenging situation, the governments must design and execute new innovative public policies for citizens to trust their government policies as well as build life satisfaction. Due to the dynamic relationship shared by the trust in government policies and life satisfaction, every group and society must be investigated separately and treated as a unique set of observations. It has been affirmed through this study's findings that Mexican undergraduate students are of the view that trusting government plays a crucial role as a mediator between their perception of coronavirus health risk and life satisfaction. The relevant findings of the study might provide guidance to governments' policy-making efforts and encourage them to support their initiatives with trust-building efforts. In addition, practitioners and academics alike may further explore what communication strategies would transmit information in a reliable fashion and efficient way as a future research topic through comparative analysis and diverse country settings.

Collaborations

A Abbas: conceptualization, literature review, research and survey design, data collection, data curation, formal data analysis, validation, and writing. AY Ar: literature review, data collection, and writing. RG Fard: literature review, and writing. A Mannan: writing – review and comments. S Hosseini: writing – review, comments and editing.
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References

1. Ar AY, Abbas A. Government ICT-based cross-sectoral collaboration strategy for financial support of low-income families during the COVID-19 pandemic. Proceedings of the 13th International Conference on Theory and Practice of Electronic Governance 2020; 560-563. Available from: http://dx.doi.org/10.1145/3428502.3428586
2. Zhou K, Xin G. Who are the front-runners? Unraveling local government responses to containing the COVID-19 pandemic in China. China Review 2021; 21(1):37-54.
3. Hetherington MJ, Husser JA. How trust matters: the changing political relevance of political trust. American Journal of Political Science 2011; 56(2):312-325.
4. Van Bavel JJ, Baicker K, Boggio PS, Capra AI, Cichocka A, Cikara M, Crockett MJ, Crum AJ, Douglas KM, Druckman JN, Drury J. Using social and behavioural science to support COVID-19 pandemic response. Nat Hum Behav 2020; 4(5):460-471.
5. Bertsou E. Rethinking political distrust. European Political Science Review 2019; 11(2):213-230.
6. Bangerter A, Krings F, Mouton A, Gille EGT, Clémence A. Longitudinal investigation of public trust in institutions relative to the 2009 H1N1 pandemic in Switzerland. PLoS One 2012; 7(1):e49806.
7. Quinn SC, Parmer J, Freimuth VS, Hilyard KM, Musa D, Kim KH. Exploring communication, trust in government, and vaccination intention Later in the 2009 H1N1 pandemic: results of a national survey. Biocur Bioteror 2013; 11(2):96-106.
8. Buls M, Beaujean DJMA, Richardus JH, Voeten HACM. Perceptions and behavioral responses of the general public during the 2009 influenza A (H1N1) pandemic: a systematic review. Disaster Med Public Health Prep 2015; 9(2):207-219.
9. López-Navarro M, Llorens-Monzonis J, Tortosa-Edo V. The effect of social trust on citizens’ health risk perception in the context of a petrochemical industrial complex. Int J Environ Res Public Health 2013; 10(1):399-416.
10. Van der Weerd W, Timmermans DR, Beaujean DJ, Oudhoff J, van Steenbergen JE. Monitoring the level of government trust, risk perception and intention of the general public to adopt protective measures during the influenza A (H1N1) pandemic in the Netherlands. BMC Public Health 2011; 11:575.
11. Zheng S, Wang Z, Wachenheim C. Risk perceptions and risk attitudes among Chinese consumers: the toxic capsule crisis. Journal of Risk Research 2017; 21(10):1184-1196.
12. Plohl N, Musil B. Modeling compliance with COVID-19 prevention guidelines: the critical role of trust in science. Psychol Health Med 2020; 26(1):1-12.
13. Oksanen A, Kaakinen M, Latikka R, Savolainen I, Savela N, Koivula A. Regulation and trust: 3-month follow-up study on COVID-19 mortality in 25 European countries. JMIR Public Health Surveill 2020; 6(2):e19218.
14. Lambovska M, Sardinha B, Belas. Impact of Covid-19 pandemic on the youth unemployment in the European Union. Ekonomicko-Manazerske Spektrum 2021; 15(1):55-63.
15. Palmer AN, Small E. COVID-19 and disconnected youth: Lessons and opportunities from OECD countries. Scand J Public Health 2021; 49(7):779-789.
16. O’Donnell A, Wilson L, Bosch JA, Borrows R. Life satisfaction and happiness in patients shielding from the COVID-19 global pandemic: a randomised controlled trial of the “mood as information” theory. PLoS One 2020; 15(12):e0243278.
17. Duong CD. The impact of fear and anxiety of COVID-19 on life satisfaction: Psychological distress and sleep disturbance as mediators. Personality and Individual Differences 2021; 178:110869.
18. Vos SC, Buckner MM. Social media messages in an emerging health crisis: tweeting bird flu. J Health Commun 2015; 21(3):301-308.
19. Tenkorang EY. Effect of knowledge and perceptions of risks of Ebola-preventive behaviours in Ghana. Int Health 2018; 10(3):202-210.
20. Ostrom E. Collective action and the evolution of social norms. Journal of Economic Perspectives 2000; 14(3):137-158.
21. Song G. Understanding public perceptions of benefits and risks of childhood vaccinations in the United States. Risk Analysis 2013; 34(3):541-555.
22. Harring N, Jagers SC, Lofgren Å. COVID-19: Large-scale collective action, government intervention, and the importance of trust. World Dev 2021; 138:105236.
23. Seehuus M, Stanton AM, Handy AB, Haik AK, Gorman R, Clifton J. Impact of COVID-19 predicts perceived risk more strongly than known demographic risk factors. J Psychosom Res 2021; 140:102599.
24. Furrer RA, Klein WMP, Avishai A, Jones K, Villegas M, Sheeran P. When does risk perception predict protection motivation for health threats? A person-by-situation analysis. PLoS One 2018; 13(3):e0191994.
25. Lim VW, Lim RL, Tan YR, Soh AS, Tan MX, Othman NB, Borame Dickens S, Thein TL, Lwin MO, Ong RT, Leo YS, Lee VJ, Chen MI. Government trust, perceptions of COVID-19 and behaviour change: cohort surveys, Singapore. Bull World Health Organ 2020; 99(2):92-101.
26. Schneider SH, Eger J, Bruder M, Faust J, Wieler LH. Does the COVID-19 pandemic threaten global solidarity? Evidence from Germany. World Dev 2021; 140:105356.
27. López-Feldman A, Porro R. Do social comparisons and negative shocks affect the subjective well-being of the poor? Evidence from the Peruvian Amazon. Journal of International Development 2021; 33(3):612-616.
28. Bolt D, Giani M, Blais A, Loewen PJ. The effect of COVID-19 lockdowns on political support: some good news for democracy? European Journal of Political Research 2020; 60(2):497-505.
29. Gonçalves C, Santinha G, Santiago A, Barros G. Collaborative place-based health governance systems: stakeholders’ perceptions in the Portuguese Baixo Vouga sub-region. Ciência & Saúde Coletiva 2021; 26(Suppl. 1):2415-2429.
30. Kye B, Hwang S-I. Social trust in the midst of pandemic crisis: Implications from COVID-19 of South Korea. Res Soc Stratif Mobil 2020; 68:100523.
46. Gasper D. Subjective and objective well-being in relation to economic inputs: Puzzles and responses. *Review of Social Economy* 2005; 63(2):177-206.

47. Zhu Z, Liu Y, Kapucu N, Peng Z. Online media and trust in government during crisis: the moderating role of sense of security. *International Journal of Disaster Risk Reduction* 2020; 50:101717.

48. Jagers SC, Harring N, Löfgren Å, Sjöstedt M, Alpizar F, Brüde B, Langlet D, Nilsson A, Almroth BC, Dupont S, Steffen W. On the Preconditions for large-scale collective action. *Ambio* 2020; 49(7):1282-1296;

49. Dawes RM. Social dilemmas. *Annu Rev Psychol* 1980; 31(1):169-193.

50. Andrew B. Market failure, government failure and externalities in climate change mitigation: the case for a carbon tax. *Public Administration and Development* 2008; 28(5):393-401.

51. Chica M, Hernández JM, Bulchand-Gidumal J. A collective risk dilemma for tourism restrictions under the COVID-19 context. *Sci Rep* 2021; 11(1):169-193.

52. Tyler TR. Psychological perspectives on legitimacy and legitimization. *Annu Rev Psychol* 2006; 57(1):375-400.

53. Ning L, Niu J, Bi X, Yang C, Liu Z, Wu Q, Ning N, Liang L, Liu A, Hao Y, Gao L, Liu C. The impacts of knowledge, risk perception, emotion and information on citizens’ protective behaviors during the outbreak of COVID-19: a cross-sectional study in China. *BMC Public Health* 2020; 20(1):1751.

54. Balog-Way DHP, McComas KA. COVID-19: reflections on trust, tradeoffs, and preparedness. *Journal of Risk Research* 2020; 23(7-8):838-848.

55. Li H, Cao Y. The bright side of the COVID-19 pandemic: public coughing weakens the overconfidence bias in non-health domains. *Personality and Individual Differences* 2021; 178:101861.

56. Charroin N, Harring N, Lapuente V. Trust, regulation, and redistribution why some governments overregulate and under-redistribute. *Regulation & Governance* 2019; 15(1):3-16.

57. Abeyesinghe S, Leppold C, Ozaki A, Morita M. Risk, uncertainty and medical practice: changes in the medical professions following disaster. *Evidence & Policy: A Journal of Research, Debate and Practice* 2020; 16(2):285-303.

58. Fatima A, Sunguh KK, Abbas A, Mannan A, Hossein I. Impact of pressure, self-efficacy, and self-competency on students’ plagiarism in higher education. *Account Res* 2020; 27(1):32-48.

59. Han Q, Zheng B, Cristea M, Agostini M, Bélanger JJ, Gützkow B, Kreienkamp J; PsyCorona Collaboration, Leander NP. Trust in government regarding COVID-19 and its associations with preventive health behaviour and prosocial behaviour during the pandemic: a cross-sectional and longitudinal study. *Psychol Med* 2021; 1-11.

60. Cronbach LJ. Coefficient alpha and the internal structure of test. *Psychometrika* 1951; 16:297-334.

61. Kaya, S, Karlıoğlu M, Toptaş T, Covid-19 Pandemisinin Ruhsal ve Psikosomatik Etkilerini Değerlendirmeye Özellikle Gelişmiş: Geçerlilik ve Güvenilirlik Çalışması. *Toplum ve Sosyal Hizmet* 2021; 32(2):525-541.

62. Xiong B, Skitmore M, Xia B. A critical review of structural equation modeling application in construction research. *Automation in Construction* 2015; 49:59-70.

63. Thanh ND, Hung PT, Hoang NM, Anh PQ. A framework of leadership and managerial competency for preventive health managers in Vietnam. *Int J Healthc Manag* 2019; 14(2):478-483.

64. Phulkerd S, Thap suvan S, Chammatrirhong A, Gray RS. Influence of healthy lifestyle behaviors on life satisfaction in the aging population of Thailand: a national population-based survey. *BMC Public Health* 2021; 21(1):43.

65. Min C, Shen F, Yu W, Chu Y. The relationship between government trust and preventive behaviors during the COVID-19 pandemic in China: exploring the roles of knowledge and negative emotion. *Prev Med* 2020; 141:106288.

66. Ezeibe CC, Ilo C, Ezeibe EN, Oguonu CN, Nwankwo NA, Ajaero CK, Osadebe N. Political distrust and the spread of COVID-19 in Nigeria. *Glob Public Health* 2020; 15(12):1763-1766.

67. Edelman. Spring update: Trust and the COVID-19 Pandemic [Internet]. *Edelman Trust Barometer* 2020; [cited 2021 jun 09]. Available from: https://www.edelman.com/sites/g/files/aatuss191/files/2020-05/2020%20Edelman%20Trust%20Barometer%20Spring%20Update.pdf

68. Schraff D. Political trust during the Covid-19 pandemic: rally around the flag or lockdown effects? *Euro J Polit Res* 2020; [ahead of print]. Available from: http://dx.doi.org/10.1111/1475-6765.12425

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