





The Impact of Internet health information on adherence to COVID-19 protocols

Mahdie Shojaei Baghini^{1*}, Kambiz Bahaadinbeigy¹, Niloofar Farsi², Reyhane Malekmohammadi²

¹Medical Informatics Research Center, Institute for Futures Studies in Health, Kerman University of Medical Sciences, Kerman, Iran

²Faculty of Management and Medical Information Sciences, Kerman University of Medical Sciences, Kerman, Iran

Article Info

Article type:
Research

Article History:

Received: 2022-05-31
Accepted: 2022-07-11
Published: 2022-08-03

*** Corresponding author:**
Mahdie Shojaei Baghini

Medical Informatics Research
Center, Institute for Futures Studies
in Health, Kerman University of
Medical Sciences, Kerman, Iran

Email: mahdiehsh@gmail.com

Keywords:

Adherence
COVID-19
Internet Health Information
Health Literacy

ABSTRACT

Introduction: The only way to limit the prevalence of COVID-19 is to adhere strictly to health protocol. In this regard, WHO has provided the information needed to prevent and deal with this disease on its website. To investigate the Impact of Internet Health Information on Adherence to COVID-19 Protocols, in Iran.

Material and Methods: This is a cross-sectional survey and structural equation modeling which is done by students of at the Kerman University of Medical Science, Iran. The data collection tool was a questionnaire. SPSS 22.0, and SmartPLS 3 software were used to analyze the data.

Results: The present study investigated the impact of health information on the WHO website on adherence to COVID-19 protocols among the students of the Kerman University of Medical Sciences. The bootstrapping results indicate relationships between health information seeking constructs and information quality, satisfaction, and reputation. Regarding the other six hypotheses in the present study, it is predicted that they will be rejected in a larger sample.

Conclusion: Online information is now available more easily, quickly, and at a lower cost compared to other sources, it should be constantly monitored and constantly improved in quality. Its usefulness, ease of use, accuracy, recency, and simplicity should be constantly investigated.

Cite this paper as:

Shojaei Baghini M, Bahaadinbeigy K, Farsi N, Malekmohammadi R. The Impact of Internet health information on adherence to COVID-19 protocols. *Front Health Inform.* 2022; 11: 121. DOI: [10.30699/fhi.v11i1.385](https://doi.org/10.30699/fhi.v11i1.385)

INTRODUCTION

The World Health Organization (WHO) called coronavirus disease a new infectious respiratory ailment that was found in Wuhan, China, in December 2019 (COVID-19) [1]. In mid-February 2020, Iran became the second focal point for spreading the coronavirus in the world [2]. The disease has spread fast over the world, posing substantial economic, environmental, and social difficulties to the human population and threatening global health. Consequently, it has become the most important contemporary global health disaster and the most significant human challenge since World War II [1]. Almost all countries have implemented programs to reduce the transmission rate of this disease [3]. As the reference for international health guidance and coordination in the United Nations system, the World Health Organization aims to build a better and

healthier future for people worldwide [4]. Therefore, the WHO has provided the information needed to prevent and deal with this disease on their website (<https://www.who.int/emergencies/diseases/novel-coronavirus-2019>). According to the WHO health protocols, to prevent COVID-19 infection, it is necessary to do the following: performing hand hygiene frequently with an alcohol-based hand sanitizer; regular handwashing with soap under running water; avoiding touching one's eyes, nose, and mouth; wearing a mouth-and-nose mask; and maintaining social and physical distance [5].

The only way to limit the prevalence of COVID-19 is to adhere strictly to health protocol [6]. However, the degree of attention and adherence to protocols varies according to social, economic, individual, and demographic factors and differences in people's personalities and job status [7, 8]. The youth in any society is the most important social asset and support

of that society, and Iran is considered one of the youngest societies in the world [7]. Moreover, among youth, university students, who are statistically in the top 10% of the society in terms of intelligence and cognitive ability, have always been considered by planners and policymakers as the national assets and the makers of the future [9].

Therefore, the researchers decided to evaluate the effect of WHO health information on the adherence of the students of Kerman University of Medical Sciences to COVID-19 protocols. On the one hand, the students of medical universities work in health facilities and play an essential role in providing health services in the society, and on the other, they are directly in contact with health-related topics and have access to a large amount of health information on the internet. The website is used as a credible source by these students. Therefore, they are expected to be more committed to health protocols than other groups. However, the general director of student affairs of the Ministry of Health emphasized that students' adherence to health protocols has decreased over the past two weeks [10]. Therefore, the present study results can help planners and policymakers control and prevent COVID-19 by identifying the factors affecting adherence to health protocols.

MATERIAL AND METHODS

Study Design

Based on the investigation of the issue and the scope of the study, the researcher used a post-positivist paradigm and a quantitative approach with a descriptive survey strategy. Moreover, the tactics related to this strategy, such as checking the construct's validity and reliability, the return rate of questionnaires, etc., were reviewed. Finally, data were collected through a standard questionnaire.

Instrument Development

The scales used to measure components in this investigation were validated in prior studies and related to the content of this study. In terms of item sources, five items were used to assess reputation, as derived from Pennington et al. [11]. According to Teo et al., website service quality was assessed using six items [12]. Five items derived from Barnes and Vidgen were used to assess information quality [13]. Health information seeking was measured using five items, as adapted from Lemire et al. [14]. Satisfaction was measured using four items according to Casaló et al. [15]. Seven adapted items from Nordfjaern et al. were used to assess adherence to COVID-19 hygienic protocols [16]. The questions were graded on a 5-point Likert scale, with "strongly agree" being the highest and "strongly disagree" being the lowest.

The three factors of reputation, satisfaction and information seeking were reflective, while the three variables of COVID-19 hygienic protocols adherence, online service quality, and information quality were formative. Furthermore, demographic data such as gender, age, education level, and history of coronavirus infection were gathered.

Data Collection and Sample

The sample size obtained by GPower software version 3.1 was 314 participants. The settings were as follows: $\alpha=0.01$ and statistical power=0.95, i.e. effect size= large and the number of variables=7. Due to the possibility of lack of cooperation, the number of distributed questionnaires was 10% higher than the determined sample size. The return rate of the questionnaires was 90%, and 310 of the questionnaires were returned. After data screening, 300 questionnaires were approved and entered into the study. That is, generalizability increased from 95% to 93% (Fig 1).

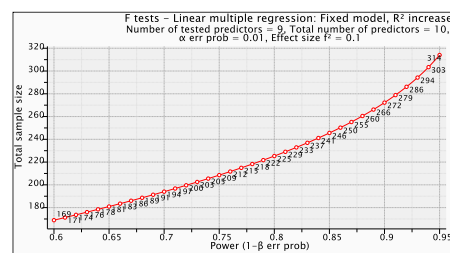


Fig 1: Sample size

The current study includes students from the Kerman University of Medical Sciences. The appropriate permits were secured from the institution before the questionnaires were distributed. Data was collected via probability sampling. Participants received questionnaires via email. Those who did not finish the questionnaires received a reminder email.

Data Analysis

The data was analyzed using SPSS 22.0 software. Structural equation modeling (SEM) was also utilized to evaluate the relationships between variables and test the research hypotheses. Because the sample size estimated using the software was smaller than the size determined using the rule of thumb [17] and because some of the constructs' questions were formative, SmartPLS 3 was utilized to undertake confirmatory factor analysis and model testing in this study [18].

RESULTS

Sample Characteristics

The present study results indicated that 73% of the participants were women. Furthermore, the majority (60%) were undergraduates and between 20 and 25 years old (78%), most of them stayed at home (84%), and 27% of the participants had a history of coronavirus infection.

Measurement Model Analysis (Outer Model)

The first stage in PLS analysis is to assess the measurement model, also known as the outer model. The relationships between observed and latent variables is measured using this model [19]. The measurement model with effects size is shown in Fig 2.

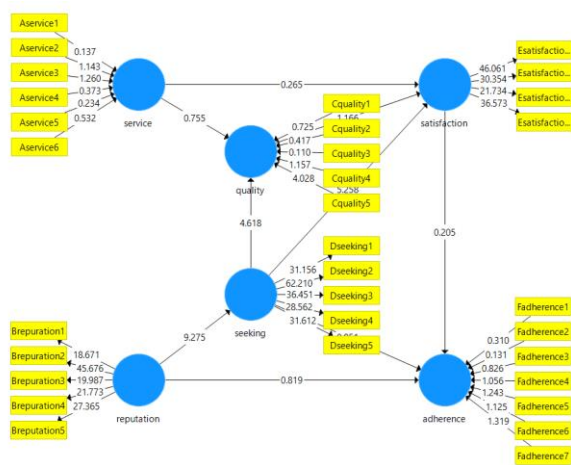


Fig 2: Measurement model with significance coefficient

Measurement Model Evaluation

Since the three variables of reputation, satisfaction, and information seeking are reflective and the three variables of adherence, website service quality, and information quality are formative, first, the reflective measurement model tests, and then the formative measurement model tests were evaluated [20].

Homogeneity Test

This test is the confirmatory factor analysis in which the researcher seeks to eliminate questions or indicators that do not have a significant share in the measurement of the corresponding variable and are not homogeneous with other indicators [21]. The confirmatory factor analysis process indicated that all indicators related to the variables with reflective indicators are higher than the cutoff point of 0.7 and are homogeneous with the questions of their conceptual framework.

Assessment of Construct Reliability

Reliability is a measure of the quality of a construct and represents the correlation between the indicators of a construct [22]. Hair to assess internal consistency reliability, the results of at least four

tests, including Cronbach's alpha, rho_A, composite reliability (CR), and communality, must reach an acceptable level, and the results must be approved by experts [20]. The Cronbach's alpha, CR, and rho_A values for each variable should be higher than 0.7. A communality index value higher than 0.5 means that the questionnaire has acceptable generalizability, and similar findings will be collected in other samples [23]. The four reliability test results indicated that the reflective measurement model is reliable, and its results can be generalized to other samples in the same population (Table 1).

Table 1: Internal consistency reliability and convergent validity

	Cronbach's Alpha	rho_A	Composite Reliability	communality	CR	AVE
Reputation	0.83	0.84	0.88	0.60	0.88	0.60
Satisfaction	0.83	0.85	0.89	0.66	0.89	0.66
Seeking of information	0.88	0.88	0.91	0.67	0.91	0.67

Assessment of Validity

Validity refers to how accurately a method measures what it is intended to measure. Before questionnaires were distributed, the researcher and experts approved the face and content validity of the information collection tool. Therefore the data are assessed for construct validity with convergent and discriminant validity. As a result, convergent and discriminant validity is used to assess the data for construct validity.

Convergent validity tested with Average Variance Extracted (AVE) > 0.5 and 2) CR > AVE [24]. The results revealed that all average variance extracted coefficients of the variables were more than 0.5; indicating that the first condition of convergent validity was met. Also, for all latent variables of the study and the second condition of convergent validity was met. Therefore, the research model can be said to have convergent validity (Table 2).

The indicators' uniqueness is measured using discriminant validity, including the three main tests the cross-loading, the Fornel-Larcker criterion, and the Heterotrait-Monotrait ratio of correlation (HTMT). According to Henseler et al., the best test is HTMT [25]. Table 2 demonstrates that for all reflective variables, this value was less than 0.9 and acceptable. As a result, the reflective model has discriminant convergence.

Formative Measurement Model Evaluation

As mentioned before, the three variables of adherence, website service quality, and information

quality were formative; therefore, Variance Inflation Factor (VIF) test was applied [26]. In formative measurement models, multicollinearity of indicators is a critical issue. According to Tenenhaus, uncollinearity of less than five is acceptable, while uncollinearity of less than two is excellent [27]. The results of the VIF showed that all formative constructs were in the acceptable range.

Table 2: Heterotrait-Monotrait Ratio (HTMT)

	Reputation	Satisfaction	Seeking of information
Reputation	-	-	-
Satisfaction	0.422	-	-
Seeking of information	0.521	0.442	-

Structural Model Analysis (Inner Model)

According to the estimation and causal hypothesis tests between exogenous and endogenous variables, the structural model is evaluated in a path diagram [28]. Fig 3 shows it in the case the coefficients were significant.

A complete control variable analysis was carried out before the research model analysis. This study revealed that one or more endogenous structures in the model are significantly associated with the four control variables (e.g., age, gender, education, and resident status). Therefore, these control variables were included in the research model to ensure that the effects of these additional variables were considered.

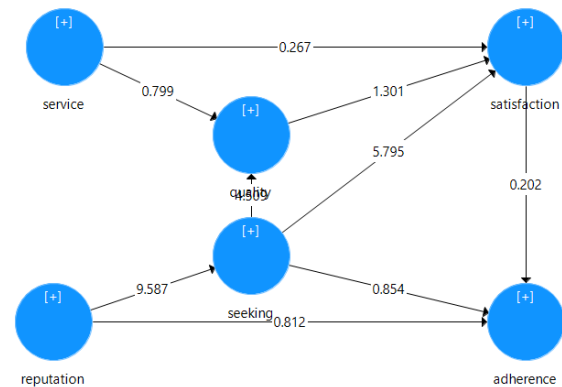


Fig 3: Structural model with significance coefficients

Based on the structural model, the significance of the structural relationships, and in case these hypotheses are significant, the intensity of the latent variable effects and the direction of these types of effects are determined [29]. Three of the nine structural relationship hypotheses were shown to be significant due to bootstrapping. There was a significant effect of reputation on seeking information, that of information seeking on the information quality, and that of information seeking on satisfaction. According to Chin, the three significant hypotheses are moderate in terms of intensity [30]. The effect of information seeking on information quality had a negative direction, and the other two hypotheses had positive directions. It is predicted that if this model is implemented in a larger sample, these three hypotheses will be confirmed. Moreover, it can be claimed that the other six hypotheses are expected to be rejected in a larger sample (Table 3).

Table 3: Hypothesis Testing

Hypothesis	Path	β	P-value	T-value	Status
H1	website service quality -> Quality of information	-0.182	0.442	0.770	Not Supported
H2	website service quality -> Satisfaction	0.028	0.801	0.253	Not Supported
H3	Reputation -> Seeking of information	0.453	0.000	9.933	Supported
H4	Reputation -> Adherence	-0.168	0.400	0.844	Not Supported
H5	Quality of information -> Satisfaction	-0.099	0.231	1.200	Not Supported
H6	Seeking of information -> Quality of information	-0.307	0.000	4.391	Supported
H7	Seeking of information -> Satisfaction	0.351	0.000	5.351	Supported
H8	Seeking of information -> Adherence	0.190	0.399	0.844	Not Supported
H9	Satisfaction -> Adherence	0.025	0.833	0.212	Not Supported

The collinearity of structural model was assessed in this study. It must be confirmed that the independent research variables are not collinear [31]. VIF values, according to Ringle, are the best indicators of the absence of collinearity between independent variables. According to Tenenhaus, an uncollinearity lower than five in questions is acceptable, and an uncollinearity below two is ideal [27]. All variables' uncollinearity in this study was less than two, and

therefore, ideal (Table 4).

Model Fit

The measurement and structural model analysis indicated that the outer model was ideal, and the inner model was moderate to weak. The quality of the model and its fit will now be assessed. A method for determining the compatibility of a theoretical model

with an experimental model is model fit [32]. Goodness-of-Fit (GoF) is used to serve this purpose [33]. According to Tenenhaus, the three values of 0.1, 0.25, and 0.36 are used to interpret GoF [27]. In the present study, $GoF=0.296648$, which is in the medium to high range, indicating that the model is fit.

Table 4: Collinearity of structural model of exogenous variables

	Adherence	Quality of information	Satisfaction	Seeking of information
Quality of information	-	-	1.161	-
Reputation	1.326	-	-	1.000
Satisfaction	1.239	-	-	-
Seeking of information	1.355	1.010	1.120	-
website service quality	-	1.010	1.049	-

DISCUSSION

The present study investigated the impact of health information on the WHO website on adherence to COVID-19 protocols among the students of the Kerman University of Medical Sciences. The bootstrapping results indicate relationships between health information seeking constructs and information quality, satisfaction, and reputation. Regarding the other six hypotheses in the present study, it is predicted that they will be rejected in a larger sample because PLS-SEM is used to predict or identify previous relevant constructs [20].

Health information seeking has a negative and moderate relationship with the quality of the information, i.e., as one increases, the other decreases. According to Zhang's research, there is a relationship between these two constructs. However, in their research, this relationship was positive in their study [34].

There was a positive and moderate relationship between reputation and health information seeking. Website reputation was considered a moderator of the relationship between health information-seeking behavior and conservative treatment-related health information-seeking behavior in a study conducted by Zhang et al. It was shown that an increase in website reputation strengthens the relationship between them [35].

Furthermore, the current study showed a positive and moderate relationship between health information seeking and information satisfaction. This study corroborates those of the previous study, that health information seeking has a significant positive effect on information satisfaction [34, 36].

The quality of health websites does not affect the information quality. This demonstrates that the

quality of the WHO website is not related to the quality of the information, which contradicts earlier studies [37, 38].

The hypotheses of the effect of website reputation on information quality, information satisfaction and adherence were not confirmed in our study. Furthermore, the current study found no evidence of a relationship between reputation and adherence. There was a significant and positive relationship between reputation and the three constructs in Lu et al.'s study. In addition, age was used as a control variable, and its effect was confirmed [39].

There was no evidence of a relationship between health information seeking and adherence. The findings of Lu et al. corroborated this results and demonstrated the lack of relationship between them [39].

The relationship between satisfaction and adherence was not confirmed. However, this relationship was confirmed with $P < 0.001$ and 99% probability in the study conducted by Zhang et al. in China [36]. Because one of the research was conducted in Iran and the other in China, the differences in the findings could be attributed to the differences in the two populations under study. Furthermore, our study population consisted of the students of the University of Medical Sciences, while the study population in Zhang's study consisted of the general public. Another difference is due to the specific type of the disease; our study was conducted during the COVID-19 pandemic with all its economic, social, political, and psychological impacts.

It is essential to think about the study's limitations. First, we concentrated solely on two aspects of Internet health information quality and satisfaction. Furthermore, other aspects of health websites, such as look, may influence patient compliance, which should be explored in future studies. Other dimensions may be considered as well. Second, in the context of Iran, this study looked at the association between Internet health information and patient compliance among students at the University of Medical Sciences. Iran, after China, became the world's second main area for the spread of the coronavirus in mid-February 2020 [2].

On the other hand, medical students are healthier than the general public because of their contact with patients and the fact that they are constantly exposed to Covid-19 news. Therefore a similar study in other contexts is needed. Finally, all concepts and relationships were only tested once. Because this study was conducted from a static standpoint, it could not account for dynamic changes in public attitudes. As a result, future research should focus on how people's beliefs change over time due to the disease's numerous mutations. Fourth, data were collected from respondents via a cross-sectional survey. As a

result, technique bias may exist. Fifth, future researchers should include the variables "e-health literacy," "perceived information asymmetry," and "trust" as independent variables in the model and investigate their role. The R2 is anticipated to improve as a result of this variable.

CONCLUSION

According to the findings of this study, there was a significant association between health information seeking and information quality, satisfaction, and reputation. Based on previous experiences and studies, this relationship can be applied to people who are not students. As a result, it is critical to encourage people to look for health information on the internet and direct them to credible, high-quality, and appropriate information sources. People should also be taught the proper concepts of information gathering. Furthermore, healthcare providers should make information accessible, simple, and trouble-free at the national and international levels. Online

information should be regularly evaluated and enhanced in quality because it is now available more efficiently, rapidly, and at a lesser cost than previous sources. Its use, ease of use, correctness, freshness, and simplicity should be tested regularly.

AUTHOR'S CONTRIBUTION

All authors contributed to the literature review, design, data collection and analysis, drafting the manuscript, read and approved the final manuscript.

CONFLICTS OF INTEREST

The authors declare no conflicts of interest regarding the publication of this study.

FINANCIAL DISCLOSURE

No financial interests related to the material of this manuscript have been declared.

REFERENCES

- Chakraborty I, Maity P. COVID-19 outbreak: Migration, effects on society, global environment and prevention. *Sci Total Environ.* 2020; 728: 138882. PMID: 32335410 DOI: 10.1016/j.scitotenv.2020.138882 [PubMed]
- Rassouli M, Ashrafizadeh H, Shirinabadi Farahani A, Akbari ME. COVID-19 management in Iran as one of the most affected countries in the world: Advantages and weaknesses. *Front Public Health.* 2020; 8: 510. PMID: 33072688 DOI: 10.3389/fpubh.2020.00510 [PubMed]
- World Health Organization. Coronavirus disease 2019 (COVID-19) Situation report- 72 highlights [Internet]. 2020 [cited: 2021 Jun 26]. Available from: www.who.int/epi-win
- World Health Organization. Our values [Internet]. 2021 [cited: 2021 Jun 1]. Available from: <https://www.who.int/about/who-we-are/our-values>
- World Health Organization. Advice for the public [Internet]. 2021 [cited: 2021 May 26]. Available from: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public>
- Coetzee BJ, Kagee A. Structural barriers to adhering to health behaviours in the context of the COVID-19 crisis: Considerations for low-and middle-income countries. *Glob Public Health.* 2020; 15(8): 1093-102. PMID: 32524893 DOI: 10.1080/17441692.2020.1779331 [PubMed]
- Smith LE, Amlôt R, Lambert H, Oliver I, Robin C, Yardley L, et al. Factors associated with adherence to self-isolation and lockdown measures in the UK: A cross-sectional survey. *Public Health.* 2020; 187: 41-52. PMID: 32898760 DOI: 10.1016/j.puhe.2020.07.024 [PubMed]
- Webster RK, Brooks SK, Smith LE, Woodland L, Wessely S, Rubin GJ. How to improve adherence with quarantine: Rapid review of the evidence. *Public Health.* 2020; 182: 163-9. PMID: 32334182 DOI: 10.1016/j.puhe.2020.03.007 [PubMed]
- Pashib M, Seyyed Moharrami I, Tatari M. The effect of premarital Counseling on marriage expectation among students of university of medical sciences. *Journal of Torbat Heydariyeh University of Medical Sciences.* 2017; 4(4): 10-5.
- Iranian Students' News Agency. Reducing the observance of health protocols by students [Internet]. 2020 [cited: 2021 Jun 7]. Available from: <https://www.isna.ir/news/99073021926/Reducing-the-observance-of-health-protocols-by-students>
- Pennington R, Dixon Wilcox H, Grover V. The role of system trust in business to consumer transactions. *Journal of Management Information Systems.* 2003; 20(3): 197-226.
- Teo TSH, Srivastava SC, Jiang L. Trust and electronic government success: An empirical study. *Journal of Management Information Systems.* 2008; 25(3): 99-132.
- Barnes SJ, Vidgen RT. An integrative approach to the assessment of e-commerce quality. *Journal of Electronic Commerce Research.* 2002; 3(3): 114-27.
- Lemire M, Paré G, Sicotte C, Harvey C. Determinants of Internet use as a preferred source of information on personal health. *Int J Med Inform.* 2008; 77(11): 723-34. PMID: 18434246 DOI: 10.1016/j.ijmedinf.2008.03.002 [PubMed]
- Casaló L, Flavián C, Guinalú M. The role of perceived usability, reputation, satisfaction and consumer familiarity on the website loyalty formation process. *Computers in Human Behavior.* 2008; 24(2): 325-45.

16. Nordfjaern T, Mehdizadeh M, Zavareh MF. Social psychology of coronavirus disease 2019: Do fatalism and comparative optimism affect attitudes and adherence to sanitary protocols? *Front Psychol.* 2021; 12: 623005. PMID: 34054641 DOI: 10.3389/fpsyg.2021.623005 [[PubMed](#)]
17. Henseler J, Dijkstra TK, Sarstedt M, Ringle CM, Diamantopoulos A, Straub DW, et al. Common beliefs and reality about PLS: Comments on Rönkkö and Evermann (2013). *Organizational Research Methods.* 2014; 17(2): 182–209.
18. Hair JF, Hult GTM, Ringle C, Sarstedt M. A primer on partial least squares structural equation modeling (PLS-SEM). Sage Publications; 2016.
19. Hair JF, Black WC, Babin BJ, Anderson RE, Tatham R. Multivariate data analysis. Pearson Prentice Hall; 2006.
20. Sarstedt M, Ringle CM, Hair JF. Partial least squares structural equation modeling. In: Homburg C, Klarmann M, Vomberg A (eds.). *Handbook of market research.* Springer International Publishing; 2017.
21. Sarstedt M, Ringle CM, Henseler J, Hair JF. On the emancipation of PLS-SEM: A commentary on Rigdon (2012). *Long Range Planning.* 2014; 47(3): 154–60.
22. Janadari MPN, Sri Ramalu S, Wei C. Evaluation of measurement and structural model of the reflective model constructs in PLS-SEM. 2016;
23. Moradi M, Miralmasi A. *Pragmatism research method.* 1st ed. Analysis Academy; 2020.
24. Chou S-W, Chen P-Y. The influence of individual differences on continuance intentions of enterprise resource planning (ERP). *International Journal of Human-Computer Studies.* 2009; 67(6): 484–96.
25. Henseler J, Ringle CM, Sarstedt M. A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science.* 2015; 43(1): 115–35.
26. Zeng N, Liu Y, Gong P, Hertogh M, König M. Do right PLS and do PLS right: A critical review of the application of PLS-SEM in construction management research. *Frontiers of Engineering Management.* 2021; 8: 356–69.
27. Tenenhaus M, Vinzi VE, Chatelin Y-M, Lauro C. PLS path modeling. *Computational Statistics & Data Analysis.* 2005; 48(1): 159–205.
28. Dakduk S, González Á, Portalanza A. Learn about structural equation modeling in smartPLS with data from the customer behavior in electronic commerce study in Ecuador (2017). SAGE Publications; 2019.
29. Sarstedt M, Ringle CM, Smith D, Reams R, Hair JF. Partial least squares structural equation modeling (PLS-SEM): A useful tool for family business researchers. *Journal of Family Business Strategy.* 2014; 5(1): 105–15.
30. Chin WW. Commentary: Issues and opinion on structural equation modeling. *MIS Quarterly.* 1998; 22(1): vii-xvi.
31. Mooi E, Sarstedt M. A concise guide to market research: The process, data, and methods using IBM SPSS statistics. Springer; 2011.
32. Hair JF, Matthews LM, Matthews RL, Sarstedt M. PLS-SEM or CB-SEM: updated guidelines on which method to use. *International Journal of Multivariate Data Analysis.* 2017; 1(2): 107–23.
33. Henseler J, Sarstedt M. Goodness-of-fit indices for partial least squares path modeling. *Computational Statistics.* 2013; 28(2): 565–80.
34. Zhang R, Lu X, Wu W, Shang X, Liu M. Mature or emerging? The impact of treatment-related Internet health information seeking on patients' trust in physicians. *Int J Environ Res Public Health.* 2018; 15(9): 1855. PMID: 30154309 DOI: 10.3390/ijerph15091855 [[PubMed](#)]
35. Zhang R, Lu X, Wu W, Shang X. Why do patients follow physicians' advice? the influence of patients' regulatory focus on adherence: An empirical study in China. *BMC Health Serv Res.* 2019; 19(1): 301. PMID: 31077196 DOI: 10.1186/s12913-019-4127-9 [[PubMed](#)]
36. Zhang H, Zhang R, Lu X, Zhu X. Impact of Personal Trust Tendency on Patient Compliance Based on Internet Health Information Seeking. *Telemed J E Health.* 2020; 26(3): 294–303. PMID: 31045486 DOI: 10.1089/tmj.2018.0296 [[PubMed](#)]
37. Boon-Itt S. Quality of health websites and their influence on perceived usefulness, trust and intention to use: An analysis from Thailand. *Journal of Innovation and Entrepreneurship.* 2019; 8(1): 1–18.
38. Pearson A, Tadisina S, Griffin C. The role of e-service quality and information quality in creating perceived value: antecedents to web site loyalty. *Information Systems Management.* 2012; 29(3): 201–15.
39. Lu X, Zhang R, Wu W, Shang X. How does health website influence patient compliance: An empirical study. *International Conference on Information Communication and Management.* ACM; 2018.