

Alhaimer, Rashed

Article

The health belief model: Evaluating governmental public health messages on social media aimed at preventing a COVID-19 epidemic in Kuwait

Cogent Business & Management

Provided in Cooperation with:

Taylor & Francis Group

Suggested Citation: Alhaimer, Rashed (2022) : The health belief model: Evaluating governmental public health messages on social media aimed at preventing a COVID-19 epidemic in Kuwait, Cogent Business & Management, ISSN 2331-1975, Taylor & Francis, Abingdon, Vol. 9, Iss. 1, pp. 1-15,
<https://doi.org/10.1080/23311975.2022.2031682>

This Version is available at:

<https://hdl.handle.net/10419/288331>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.



<https://creativecommons.org/licenses/by/4.0/>

The health belief model: Evaluating governmental public health messages on social media aimed at preventing a COVID-19 epidemic in Kuwait

Rashed Alhaimer

To cite this article: Rashed Alhaimer (2022) The health belief model: Evaluating governmental public health messages on social media aimed at preventing a COVID-19 epidemic in Kuwait, Cogent Business & Management, 9:1, 2031682, DOI: [10.1080/23311975.2022.2031682](https://doi.org/10.1080/23311975.2022.2031682)

To link to this article: <https://doi.org/10.1080/23311975.2022.2031682>



© 2022 The Author(s). This open access article is distributed under a Creative Commons Attribution (CC-BY) 4.0 license.



Published online: 03 Feb 2022.



[Submit your article to this journal](#)



Article views: 3167



[View related articles](#)



[View Crossmark data](#)



Citing articles: 4 [View citing articles](#)



Received 23 June 2021
Accepted 13 January 2022

*Corresponding author: Rashed Alhaimer Business Department, Arab Open University – Kuwait, Kuwait City 6St Al-Ardiya, Kuwait
E-mail: ralmarri@aou.edu.kw

Reviewing editor:
Teresa Villace, Business. Marketing Area, Universidad Rey Juan Carlos, Spain

Additional information is available at the end of the article

MARKETING | RESEARCH ARTICLE

The health belief model: Evaluating governmental public health messages on social media aimed at preventing a COVID-19 epidemic in Kuwait

Rashed Alhaimer^{1*}

Abstract: This study aimed to examine the effect of embracing the Health Belief Model (HBM) in governmental public health messages on social media during the coronavirus disease 2019 pandemic. Adoption of the HBM seeks to improve the level of response of Kuwaiti people towards governmental messages regarding social distancing, staying at home, and self-protection. To fulfil the study's aim, a quantitative research design was adopted in which data were collected from 746 respondents in Kuwait to examine the effect of perceived susceptibility, severity, benefits, barriers, health motivation, and cues to action, based on each individual's behaviour. Data were analysed through AMOS 22.0 and the findings showed that governmental messages on social media should consider the above-mentioned aspects in order to positively impact the behaviour of Kuwaiti individuals.

Subjects: Healthcare Management; Corporate Governance; Marketing Research; Internet / Digital Marketing / e-Marketing; Public Relations; Relationship Marketing

Keywords: health belief model; public health; government; COVID-19; Kuwait

ABOUT THE AUTHOR

Alhaimer, Rashed: I hold a Ph.D. from Brunel University, London. I currently work as an Assistant Professor at Arab Open University, Kuwait Branch. I am deeply interested in the topics of digital marketing, marketing through social networking sites, social marketing, and entrepreneurship and small projects. I have a number of publications in the relevant areas.

PUBLIC INTEREST STATEMENT

This study aimed to examine the effect of embracing the Health Belief Model (HBM) in governmental public health messages on social media during the coronavirus disease 2019 pandemic. Adoption of the HBM seeks to improve the level of response of Kuwaiti people towards governmental messages regarding social distancing, staying at home, and self-protection. To fulfil the study's aim, a quantitative research design was adopted in which data were collected from 746 respondents in Kuwait to examine the effect of perceived susceptibility, severity, benefits, barriers, health motivation, and cues to action, based on each individual's behaviour. Data were analysed through AMOS 22.0 and the findings showed that governmental messages on social media should consider the above-mentioned aspects in order to positively impact the behaviour of Kuwaiti individuals.

1. Introduction

Public authorities have sought to influence public opinion (Bernays, 2015), and have used media platforms and governmental policies to influence the attitudes and behaviour of individuals towards particular social, economic, political, and health issues (Bernays, 2015; Salleh, 2017). Changing attitudes, and ultimately behaviours, requires years of continuously exposing people to explicit and subliminal messages via numerous means, such as television, radio, newspapers, and social media platforms like Instagram, Facebook, and Twitter (Mason et al., 2021).

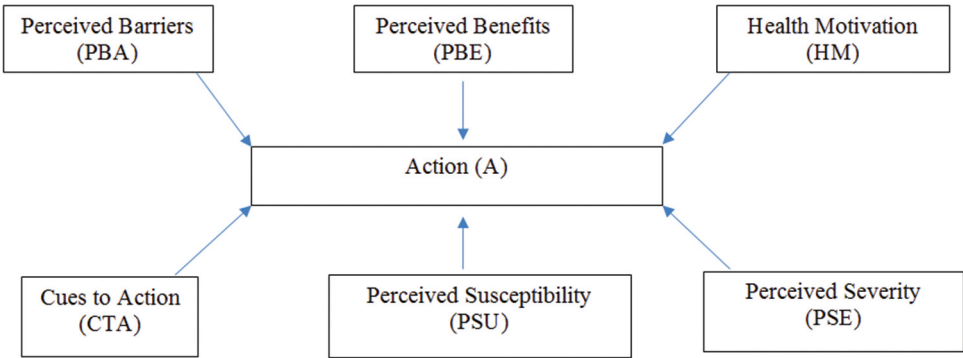
During the coronavirus disease 2019 (COVID-19) pandemic, authorities were tasked with altering the behaviour of individuals within a brief period (Han et al., 2020; Qazi et al., 2020). Owing to the highly contagious nature of the COVID-19 virus, individuals need to undertake the highest levels of precaution to slow its spread and protect themselves and others from infection (Nueangnong et al., 2020; Schnitzer et al., 2020). People have been asked to respect the two-meter social distancing requirement and avoid social gatherings, resulting in the lessening of routine activities such as shopping, working, and meetings (Al-Rasheed, 2020). Individuals have been encouraged to wear approved facial masks, wash hands, and use sanitizers regularly, thus requiring individuals to keep these items with them whenever they venture into a public space (Al-Ma'seb's & Alaslawi, 2021). Despite the potential ease of attaining these minor behavioural changes, their actual implementation—despite formal requests by many governments—has been difficult to achieve (Bayes et al., 2020; Toriro et al., 2021) because many people are resistant to change. In the UK, despite daily government COVID-19 briefings, people continued to visit public beaches without practicing social distancing (Walter-mccabe, 2020). In Germany, masses gathered without social distancing in Berlin to demonstrate and demand that the government lift the lockdown policy (Armbruster & Klotzbücher, 2020). Such protesters were primarily motivated by false information circulating on social media, rather than by epidemiologists, concerned government leaders, educators, or civil engineers (Chae & Park, 2020). In Kuwait, people have continued attending weddings, funerals, public prayers, and other social gatherings without respecting the lockdown ordinances imposed by the government (Al-Sejari & Al-Ma'Seb, 2021). Neglecting such governmental guidelines has generated questions concerning the failure of governmental policies to protect public health (De Neys et al., 2020). The health advancement policies implemented by municipal authorities have been ineffective, as evidenced by the daily increase in COVID-19 cases and the subsequent preparations to impose additional lockdown policies or tighten those that are already existing (Briscese et al., 2020).

The failure to influence the behaviour of people has necessitated the identification of the reasons for this failure (Nomani et al., 2020), and warranted insight into the types of messages that should be communicated in governmental guidelines to increase citizens' compliance (Al-Sejari & Al-Ma'Seb, 2021). The main issues to be emphasised on social media to quickly change people's behaviour can also be identified in this manner. All this information is valuable because eliminating the pandemic requires instant and enduring changes to people's behaviours.

Among the various theories that focus on behavioural change, the present study considered the health belief model (HBM). This study identifies the factors (perceived susceptibility, perceived severity, cues to action, health motivation, perceived benefits, and perceived barriers) that should be included in governmental social media messages aiming to change public behaviour. As such, the primary contribution of this study is to assist public policymakers, hypothesizing and concluding that the government should develop public media messages that embrace all HBM factors to encourage an effective change in the behaviours of the Kuwaiti people.

This study found several factors influencing individuals' behaviours. These factors have been considered in the existing literature, but here they are brought together to analyse behaviour on a larger scale. Moreover, due to the lack of studies on the topic in the specific context of Kuwait, this research filled a gap in the knowledge about the ways in which public authorities can include

Figure 1. Conceptual model.



variables of the HBM in their public messages on social media platforms in order to encourage people to adopt behavioural styles that help contain the spread of the COVID-19 pandemic.

2. Literature review

The spread of COVID-19 can be slowed down by adhering to certain guidelines (e.g., social distancing, sanitizing, wearing a mask; Patma et al., 2021; Zeb et al., 2021). These tactics are agreed upon and generally well-known worldwide, but many people fail to conform to pandemic mandates, for a variety of reasons (Gaber & Elsamadicy, 2021). However, there is a lack of studies (e.g., Abbas et al., 2021; Nguyen & Ha, 2021) about the reasons for which governments fail to let people abide by the lockdown policies. Such failure is derived from the governments’ lack of use of healthcare models (i.e. HBM) to change individuals’ behaviours towards lockdown policies.

Understanding, predicting, and influencing healthy behaviours among the population are critical issues for healthcare providers (Pham et al., 2020). Even with co-operation from citizens, a proven evaluation tool must exist to assist policymakers in communicating effectively with the citizens they are endeavouring to influence. The HBM is a psychosocial model that predicts factors affecting individual practices (Nutbeam et al., 2010). In the ongoing COVID-19 pandemic, the HBM was adopted to identify factors that change people’s attitudes towards public policies (Nasir et al., 2020).

The HBM is a theoretical framework that is used as a landmark to direct planning for disease prevention and health promotion programs (Orji et al., 2012) Its common use is derived from its

Figure 2. Validated conceptual model.

Perceived Barriers (PBA)	Perceived Benefits (PBE)	Health Motivation (HM)
.264	.144	.288
R ² =.135		
Action (A)		
.196	.196	.140
Cues to Action (CTA)	Perceived Susceptibility (PSU)	Perceived Severity (PSE)

efficiency in explaining and predicting factors that modify personal changes in health behaviour (Hall, 2012). For instance, it focusses on the role of psychological factors (i.e. perceptions) in the severity of and susceptibility for diseases. Hence, it guides decision makers about the significance of focussing on these two aspects to shift individual behaviour (Kim et al., 2012). HBM considers the role of demographic and psychological variables in changing personal perceptions. While demographic variables include factors such as age, gender, and educational background, examples of psychological variables include personality traits and peer group pressure (Wong et al., 2020). Thus, it can be deduced that HBM acknowledges various contextual factors (i.e. internal factors related to persons such as their demographic information and psychology). Nevertheless, HBM can be criticised for dismissing external structural variables, such as governmental coercion, as factors in changing personal behaviour.

This study aimed to test the role of the HBM within the context of Kuwait in order to develop governmental policies based on the HBM framework. This aim was achieved by questioning Kuwaiti individuals about the effectiveness of HBM factors in changing behaviour. While positive responses to the questionnaire were expected to encourage the government to adopt health promotion and prevention plans reflecting HBM factors, negative or neutral responses were expected to lead to the government dismissing the HBM factors that fail to influence personal behaviour from such plans. Accordingly, the following research question was investigated: To what extent is the Kuwaiti Governmental Policy of tackling the COVID-19 pandemic compatible with the HBM?

3. Conceptual model

Figure 1 presents the conceptual model. As can be seen, the independent variables are perceived barriers, perceived benefits, health motivation, cues to action, perceived susceptibility, and perceived severity, and the dependent variable is action.

3.1. Perceived susceptibility and action

Perceived susceptibility refers to an individual's subjective perception of the risk of contracting COVID-19. People's vulnerability to a specific disease can vary according to various factors such as experience, background, and educational status (Jose et al., 2021). When individuals possess a low perceived susceptibility, they are unaware of the risk of contracting COVID-19, and do not change their behaviours to avoid becoming infected (Wang et al., 2020). Perceived susceptibility affects people's actions towards avoiding infection and reducing its spread in the community. Certain behaviours, such as maintaining safe distances and washing hands, reduce the potential spread of infection. Hence, any message that aims to change people's behaviours must consider maximizing the level of perceived susceptibility regarding the health issue. Nacoti et al. (2020) suggest that the government should consider the ability to increase perception, awareness, and the potential for changing existing behaviour norms among the public. Individuals must sense the risk and understand its depth, seriousness, and associated complications. Thus, the first hypothesis is as follows:

H1: Developing governmental messages that consider perceived susceptibility would positively impact people's actions.

3.2. Perceived severity and action

Notably, perceived seriousness can indicate the adverse outcomes a person might associate with contracting a specific disease, such as COVID-19. As the vaccine is initially being administered to the most vulnerable citizens and frontline workers, it is vastly important for the general public to practice improved hygiene to reduce the likelihood of potentially transmitting the deadly infection (Combs et al., 2020). Therefore, to encourage individuals to receive the vaccination, public health professionals must develop messages that increase the perception of the likelihood and threat of contracting COVID-19.

Walrave et al. (2020) suggest that for any message to be successful in changing the behaviour of the public towards a health issue, it must depend on increasing the public's level of perceived severity of that disease. As such, in the case of the COVID-19 pandemic, the government should focus on the reality that although there are various types of vaccinations thus far, the efficiency of such vaccines may not fully guaranteed; hence, contracting the virus could lead to catastrophic consequences (Mukhtar, 2020). Therefore, the following can be hypothesised

H2: Developing governmental messages that express perceived severity would positively impact people's actions.

3.3. Health motivation and action

Health motivation is linked to the specific healthcare factors that influence improved health practices during a pandemic (Mukhtar, 2020), and is an external factor that significantly impacts an individual's psychosocial traits, transforming actions into an intense sense of motivation. Health motivation during the COVID-19 pandemic can be realised through a series of strategies. Nowak et al. (2020) suggest that an individual's structural and demographic variables can influence their perception. Demographic variables, including gender, age, and educational qualifications, contribute significantly to promoting health motivation. For example, older people or those in a poor health condition and weak immune system are more susceptible to COVID-19. Walrave et al. (2020) emphasise the necessity for people with underlying health conditions or chronic illnesses to practice healthy behaviours and remain at a safe distance from contamination zones.

Similarly, structural variables, such as knowledge, motivate individuals to maintain a safe distance from contamination zones. Changing these variables indirectly influences human motivation and behaviour by acting on aspects related to barriers, susceptibility, benefits, and severity. This leads to the following hypothesis:

H3: Developing governmental messages that include health motivation would positively impact people's actions.

3.4. Perceived benefits and action

Perceived benefit is the belief about positive outcomes linked with a certain behaviour in response to a real threat (Al-Sabbagh et al., 2020). According to Callow et al. (2020), perceived benefit refers to the perception of positive consequences caused by a series of specified actions. In behavioural medicine, this explains the motive of an individual, who is performing a specific behaviour, intervention, or treatment (Jose et al., 2021). Maintaining social distance and educating the population to follow the government's mandates and policies can inform citizens of health and wellness aspects. Sarwar et al. (2020) believe that if the perceived benefits are well explained to people, they are likely to follow regulations and maintain improved health practices. Thus, people must be educated and informed about the possible benefits of improving healthcare norms during a pandemic. This leads to the following hypothesis:

H4: Developing governmental messages that include perceived benefits would positively impact people's actions.

3.5. Perceived barriers and action

Perceived barriers estimate a person's external factors, such as social, environmental, and economic obstacles, to address a specific behaviour and attain a desired goal (Jose et al., 2021). In a study by Nacoti et al. (2020), participants were asked whether they considered a series of

activities imposed by governing bodies to be cues related to changes in behaviour, and most stated that the activities helped them accomplish behavioural changes.

The perceived barriers were primarily thought barriers, as there was an absence of COVID-19 prevention information, despite the immense hype by the media and secret organisations, influencing political decisions that emerged as significant barriers to adopting suitable preventive measures for avoiding infection (Costa, 2020). Conversely, the sudden influx of knowledge, through media sources, led to increased confusion and limited behaviour change (Combs et al., 2020). Accurate knowledge of the virus and its mode of transmission, contamination, and infection is necessary to overcome these barriers (Wang et al., 2020). Mukhtar (2020) suggests that despite the abundant self-efficacy, many people tend to follow recommendations from governing authorities. Accordingly, the following hypothesis can be advanced:

H5: Developing governmental messages while considering perceived barriers would positively impact people's actions.

3.6. Cues to action

Cues to action refers to the stimulus required to initiate the process of decision-making and has the sole aim of accepting a recommended healthcare intervention. Nowak et al. (2020) suggested that cues to action lead to behavioural changes among people, including strategic programs implemented by governing bodies. Healthcare providers and the media promote engagement in health-related behaviour's. However, some cues to action during the COVID-19 pandemic could increase the rate of infection, promoting the population to opt for basic norms to avoid infection.

Cues to action, such as fever and respiratory distress, serve as significant stimuli to promote isolation and social distancing, and help understand how stimuli may influence the public (Al-Sabbagh et al., 2020). However, it would be careless for the government to wait for cues to occur. Rather, the government must understand past cues and develop health policies to implement new health behaviour models to ensure healthy behaviour's among the priority population. Cues to action can inform citizens of impending dangers while propagating healthy behavioural norms to avoid infection (Costa, 2020). Hence, the following hypothesis can be advanced:

H6: Developing governmental messages that include cues to action would positively impact people's actions.

4. Methodology

The researchers' evaluations were based on incorporating HBM. A deductive method was preferred to evaluate the hypotheses. Researchers gathered information from Kuwaiti participants using a web-based, self-administered questionnaire to avoid direct contact (Al-Hattami & Gomez Corona, 2021; Al-Rasheed, 2020). The question items were rated on a five-point Likert-scale, with 1 indicating "strongly disagree" and 5 indicating "strongly agree". The demographic characteristics of age, gender, and educational level were recorded in table 2.

The questionnaire was translated into Arabic to prevent miscommunication due to language errors. Following ethical approval from the university, 30 Kuwaitis, who are colleagues at the university, were provided with questionnaires; they recorded their views on the difficulties encountered while openly answering the questions. The participants, who constitute pilot study sample, were chosen using the convenience sample, which saved time and expense. The questionnaire was reviewed by colleagues at the university to determine the most effective and efficient duration, simplicity, and clarity. Moreover, a Cronbach's alpha value of 0.70 indicated the survey's internal and stable reliability.

Table 1. Response rate

	Number of responses	%
Sample	900	100
Returned responses	772	85.77
Incomplete and problematic responses	26	2.88
Valid responses	746	82.88

Multifarious social media are used in Kuwait. According to the Digital Marketing Community (2019), Facebook is the most used social media platform in Kuwait with a total of 3.00 million monthly active users. It is followed by Instagram at 1.80 million monthly active users. Twitter comes in the third place with 1.68 million monthly active users. There are stark differences between the purposes of each platform. While Facebook connects people, Twitter helps in networking based on topics and ideas. Moreover, while Facebook permits users to write unlimited words, Twitter has confined their usage to only 140 characters for each tweet. Both the platforms permit the use of hashtags to group topics/ideas. Instagram is an intrinsically different social media platform that is more mobile-friendly, and effective for uploading and sharing images. It is worth noting that the Kuwaiti Government uses all three platforms for disseminating its various political, social, and health messages.

Accordingly, population includes all Kuwaitis who use social media platform. sampling frame (inclusion/exclusion) is the part of population from which sample is selected. Inclusion criteria covers all Kuwaitis who use Facebook, Instagram, and Twitter.

In this study, 746 respondents who used the three platforms of Facebook, Instagram, and Twitter within the Kuwaiti context were selected. Participants using only one of these social media platforms were excluded; this allowed the researcher to ensure that the included participants were able to receive the government's online messages about the COVID-19 pandemic. In regard to sample size, Based on margin of error (5%), confidence level (90%), population of 4.25 millions of active users in 2021 within Kuwait, and response distribution of (50%), sample size of this study would be 384. However, this number has been increased during 14 days as time for filling the survey has allowed more numbers of participants to fill and submit the questionnaire. Moreover, increasing the number of participants is useful as it would increase the reliability of the results in terms of its generalisation to the whole population. Furthermore, larger sample size would minimise the variability; hence, it would reduce sampling bias.

Structural equation modelling (SEM) was used to evaluate the compiled input and opinions of the selected respondents (Marsh et al., 2020). At an earlier stage, confirmatory factor analysis (CFA) was used to verify the validity, reliability, and fitness of the data collected. Additionally, theories were tested to ensure the predictive viability of the conceptual paradigm implemented in subsequent phases.

5. Results

As shown in Table 1, the sampled data are classified into comments, incomplete comments, correct answers, and problematic replies. The validity, durability, purity, and usefulness of the data were examined to implement the data screening method and normal distribution.

Based on AMOS 22.0, using Mahalanobis D squared distance (D2), the researcher screened the vector outliers with a p-value of 0.000. In this analysis, 16 outliers were retained because the same sets did not boost the outcomes obtained from the statistical examination of variables. Eradicating outliers had a negative impact on the general results for the entire population. However, the tests for

Demographic Characteristics	Categories	Frequency	Percentage
Age	<ul style="list-style-type: none"> • 20–29 • 30–39 • 40 years old and above 	<ul style="list-style-type: none"> • 181 • 452 • 113 	<ul style="list-style-type: none"> • 0.24 • 0.61 • 0.15
Gender	<ul style="list-style-type: none"> • Males • Females 	<ul style="list-style-type: none"> • 410 • 336 	<ul style="list-style-type: none"> • 0.55 • 0.45
Educational Level	<ul style="list-style-type: none"> • High school • Bachelor • Master 	<ul style="list-style-type: none"> • 179 • 358 • 209 	<ul style="list-style-type: none"> 0.24 0.48 0.28

Table 3. Measurement model

Fit Indices	Cut-off Point	Measurement Model	Modified Measurement Model
CMIN/DF	≤ 3.00	1.937	1.665
GFI	≥ 0.90	0.875	0.913
AGFI	≥ 0.80	0.861	0.889
NFI	≥ 0.90	0.902	0.938
CFI	≥ 0.90	0.960	0.973
RMSEA	≤ 0.08	0.049	0.042

normality involved the collection of data. The “skewness-kurtosis method” was used to analyse the coefficients of normality through univariate tests. The measure considered that the skewness cut-off point was 3, and the kurtosis cut-off point was 8 (Park, 2015). The skewness-kurtosis approach was implemented throughout the data set, with statistical results falling within the predictable level.

5.1. Respondents’ profiles and characteristics

Demographic characteristics included gender, age, and educational level. Regarding gender, 410 males and 336 females participated in the survey. Regarding age, 452 participants were aged 30–39 years, 181 participants were aged 20–29 years, and 113 participants were 40 years old and above. Regarding educational level, 358 participants had a university bachelor’s degree, and 209 participants had a master’s degree as their highest degree, and 179 participants had a high school degree. Table 2 provides details about Respondents’ profiles and characteristics.

5.2. Structural equation modelling analysis

The SEM method was implemented in two phases. The first phase involved evaluating the trustworthiness and validity of the mechanisms for calculating the reliability of the model selected by means of CFA (Marsh et al., 2020). The second phase involved evaluating the coefficients of endogenous and environmental factors. The two-stage SEM study was conducted on all HBM systems.

5.3. Confirmatory factor analysis

Fitness standards and fit-force modelling were tested in relation to various fit indexes, including the minimum discrepancy per degree of freedom (CMIN/DF), goodness-of-fit index (GFI), adjusted goodness-of-fit index (AGFI), normed fit index (NFI), non-normed fit index (NNFI), comparative fit index (CFI), and root mean squared error of approximation (RMSEA; Park, 2015). As seen in Table 3,

Table 4. Construct reliability

Latent Constructs	Cronbach's alpha (α)	Composite Reliability (CR)	Average Variance Extracted (AVE)
HM	0.91	0.91	0.72
PSE	0.86	0.86	0.61
PSU	0.84	0.84	0.64
PBA	0.86	0.88	0.72
PBE	0.83	0.83	0.62
CTA	0.85	0.86	0.67
A	0.94	0.94	0.84

all latent constructions were calculated by their own indicators (34 items). Except for GFI, all the indices were defined inside the thresholds, although the chi-square was significant: $\mu^2 = 786.445$; the degree of freedom (DF) = 406. The statistical method was further established for specification and refining, as defined in Marsh et al. (2020), to improve model fitness regarding uniform reversal weights, standard covariance matrix, and shift indices.

PBE5 and PBA6 were below the cut-off (> 0.5) as structured regression values, and were deleted. Similarly, uniform revenue expenditures were discovered to be below cut-off points. Many researchers have indicated that CFA may be reassessed to validate fitness (Heck et al., 2013). The modified and improved measuring model is indicated in Table 3. However, the chi-square was significant and high: $\mu^2 = 493.169$; DF = 296; P = 2000; no further adjustments were required.

5.3.1. Reliability of constructs

Alpha (α), CR, and discriminant validity derived (AVE) from Cronbach were tested to assure a suitable scale reliability.

5.3.2. Validity of constructs

The probabilistic and unequal validity of constructs was investigated in the implementation of the CFA. The results were slightly lower than the cut-off value (0.50). Moreover, with a p-value lower than 0.001, the construct measurements are statistically important. Furthermore, all interconnected transmission figures were discovered to be 0.85, in addition to the AMOS 22 coefficient Table 4 illustrates that both latent constructs possessed the square AVE root above their inter-relationship figures with other constructs. Thus, convergent and unequal truth can be assumed to have been obtained.

5.3.3. Common Method Bias

Harman's common method bias (CMB) was considered. The constructs (HM, PSE, PSU, PBA, PBE, CTA, and A) and the size of the components were assembled. All objects were inspected by a revolving factor solution after being loaded onto the exploratory factor analysis (EFA). The initial factor was less than the cut-off point (50%; 37.530 variance), and no factor was observed in emergence. The data obtained were accurate (Saqlain et al., 2020).

5.4. Structural model

The analysis validated the model and tested the nine causal mechanisms of the dependent variables in relation to their independent factors (Figure 2). The second phase of the SEM was the structural model studied, and the chi-square value was significant ($\mu^2 = 524.858$, DF = 300, P < 0.001). Additionally, all the fit indexes were below the recommended ranges.

Table 5. Discriminant validity

Latent Constructs	HM	PSE	PSU	PBA	PBE	CTA	A
HM	0.85						
PSE	0.67	0.78					
PSU	0.69	0.56	0.80				
PBA	0.30	0.21	0.28	0.85			
PBE	0.34	0.34	0.34	0.22	0.79		
CTA	0.28	0.26	0.25	0.24	0.17	0.82	
A	0.75	0.62	0.68	0.51	0.47	0.38	0.92

Note: Diagonal values are squared roots of AVE; off-diagonal values are the estimates of inter-correlation between the latent constructs.

Path coefficient values for A from HM ($\beta = 0.288$, $P < 0.001$), PSE ($\beta = 0.140$, $P < 0.001$), PSU ($\mu = 0.196$, $P < 0.01$), PBA ($\alpha = 0.264$, $P < 0.01$), PBE ($\beta = 0.144$, $P < 0.001$), and CTA ($\mu = 0.1003$, $P = 0.003$) are given in [Table 6](#).

6. Discussion

The complete analysis proves that the HBM successfully attained that construct validity, reliability, and model fitness were achieved. Based on the results in [Table 6](#), HM, CTA, and PBE are factors that have the highest level of impact, while PSE, PBA, and PSU are factors that have a lower level of impact on personal behaviour.

The findings indicate that all factors have a positive impact on the decision of people to change their behaviour, with the highest effect originating from health motivation and lowest effect deriving from cues to action. Thus, including messages that reflect HBM would improve the effectiveness of governmental public health social media messages in changing people's behaviours. As such, the government can focus on increasing the usage of statements that reflect factors such as perceived severity (e.g., having COVID 19 would be deadly for many persons); perceived susceptibility (e.g., not abiding by social distancing would lead to make persons more vulnerable towards being affected by COVID 19). Through including statements that reflect the independent variables of HBM, Kuwaitis users of social media would show higher tendency to change their behaviour to abide by the policies of social distancing.

This research will be helpful to policymakers who are currently attempting to deal with the COVID-19 pandemic. In particular, the study convincingly shows the crucial role of governmental messages in assuring that the population conforms to pandemic-halting measures. Moreover, this study is unique as it demonstrates a practical technique for governments to benefit from the theoretical basis of healthcare in their messages through social media to shift the attitude and behaviour of people. In other words, this research would help decision makers adopt health promotion action plans when using social media to change individuals' behaviour towards specific health problems.

6.1. Implications for practice and/or policy and research

Regarding perceived severity, the government should develop messages that emphasise the health consequences of contracting COVID-19 (Reuben et al., [2020](#)). The focus should be on identifying the worst-case scenario that could happen to people who contract the virus. This can be accomplished by increasing subjective assessments of the risk of developing health ramifications if one tests positive for COVID-19 (Costa, [2020](#)). Increasing the level of subjective

Table 6. Standardised estimates of the structural model

Path	Standardised Estimate	Critical Ratio	P-value	Significance
HM→A	0.288	4.840	<0.01	Significant
PSE →A	0.140	2.849	<0.01	Significant
PSU →A	0.196	3.533	<0.001	Significant
PBA→A	0.264	7.629	<0.001	Significant
PBE →A	0.144	3.822	<0.001	Significant
CTA→A	0.103	3.001	<0.01	Significant

assessments of risk can be achieved by increasing the awareness of people's susceptibility to COVID-19 and the virus' propensity to spread.

Perceived benefits can be included in governmental messages by featuring the potential benefits of people changing behaviours to protect themselves, their families, and those with underlying conditions (Almazeedi et al., 2020). Perceived barriers should be considered in order to enable effective behavioural changes among Kuwaitis (Wahed et al., 2020). Exploring the extent to which people have access to social medial platforms will allow the government to identify segments of the population, such as older people, people with special needs, and children, who cannot or do not know how to use social media platforms (Walrave et al., 2020).

Cues to action should be considered in governmental messages by including stories of people who were diagnosed with and suffered from COVID-19, as well as the families of those who died due to contracting the disease (Karasneh et al., 2021). Health motivation will be assured when the government includes serious warnings about the threat of COVID-19, and when people exercise preventive action to protect themselves (Wahed et al., 2020). By including these independent variables in governmental messages on social media, the public authorities can initiate behavioural changes among the Kuwaiti people.

Further implications include the possibility of the government adopting various intervention strategies, such as utilizing advertisements on social causes, pictures of well-behaved persons, and pictures of persons who did not abide by the guidelines of the government, and hence, contracted COVID-19. For instance, the government can upload photos of those individuals on Instagram—after obtaining their permission—who are in hospital to increase the awareness of people about the severity of the disease.

6.2. Limitations and future recommendations

This study had a few limitations. First, it collected data through an online questionnaire, which could only be completed by individuals with access to social media platforms. Thus, the research discounted population segments that do not use social media. Accordingly, the results cannot be generalised to the entire population without undermining the research's reliability. Second, qualitative data collection methods, such as interviews and focus groups, were not included in this research. Such data are essential for gaining a holistic understanding of the opinion of people towards governmental social media messages, and should be incorporated in future research. Third, there are practical limitations to the government's adoption of the HBM within the context of Kuwait. For instance, providing health motivation may not be affordable due to financial reasons. Furthermore, optimum adoption of the HBM in governmental plans requires the decision makers to acknowledge the role of demographic and psychological factors of Kuwaiti individuals. However, considering the demographical and psychological

factors of an entire population is impractical; hence, a gap will be left in governmental plans when adopting policies that consider the factors of the HBM.

Future studies should focus on collecting data from diverse sectors of the Kuwaiti population so that results can be generalised to the entire population. Moreover, future studies should consider employing mixed methods to obtain both numeric and textual data, enabling researchers to form a more comprehensive understanding of the manners in which people change their behaviour during times of emergency. Further, this study does not provide details about the ways of framing the content of governmental messages for each social media platform (Facebook, Instagram, and Twitter). Thus, future studies can focus on the message content that is most suitable for each social media platform so that the Kuwaiti government can understand how successful message content can be developed, and how such messages can affect people's behaviours.

Acknowledgements

I am extremely grateful to my aunts, Waddhah Salem Alhaimer and Setah Salem Alhaimer, who died from COVID-19 complications; they have always been sources of strength, motivating me to complete this research. May their noble souls rest in peace by the grace of the Almighty. Further, I dedicate this research to all who are suffering or have died from COVID-19 complications.

Funding

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Author details

Rashed Alhaimer¹

E-mail: ralmarri@aoou.edu.kw

ORCID ID: <http://orcid.org/0000-0002-3774-1342>

¹ Business Department, Arab Open University, Kuwait.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Citation information

Cite this article as: The health belief model: Evaluating governmental public health messages on social media aimed at preventing a COVID-19 epidemic in Kuwait, Rashed Alhaimer, *Cogent Business & Management* (2022), 9: 2031682.

References

- Abbas, J., Wang, D., Su, Z., & Ziapour, A. (2021). The role of social media in the advent of COVID-19 pandemic: Crisis management, mental health challenges and implications. *Risk Management and Healthcare Policy*, 14(5), 1917. <https://doi.org/10.2147/RMHP.S284313>
- Al-Hattami, H. M., & Gomez Corona, C. (2021). Determinants of intention to continue usage of online shopping under a pandemic: COVID-19. *Cogent Business & Management*, 8(1), 1936368. <https://doi.org/10.1080/23311975.2021.1936368>
- Al-Ma'seb, H., & Alaslami, H. A. (2021). Social Workers' Knowledge and Ability in Crisis Intervention in Kuwait-A Case of COVID-19. *Social Work in Public Health*, 36(5), 577-587. <https://doi.org/10.1080/19371918.2021.1932665>
- Al-Rasheed, M. (2020). Protective behavior against COVID-19 among the public in Kuwait: An examination of the protection motivation theory, trust in government, and sociodemographic factors. *Social Work in Public Health*, 35(7), 546-556. <https://doi.org/10.1080/19371918.2020.1806171>
- Al-Sabbagh, M. Q., Al-Ani, A., Mafrachi, B., Siyam, A., Isleem, U., Massad, F. I., Alsabbagh, Q., & Abufaraj, M. (2020). Predictors of adherence to home quarantine during COVID-19 crisis: The case of health belief model in Jordan. *Psychology, Health & Medicine*, 27(1), 215-227. <https://doi.org/10.1080/13548506.2021.1871770>
- Al-Sejari, M. M., & Al-Ma'Seb, H. B. (2021). Precautionary measures and illness attitudes toward COVID-19 among a sample of the Kuwaiti population. *Social Work in Public Health*, 36(1), 1-11. <https://doi.org/10.1080/19371918.2020.1835774>
- Almazeedi, S., Al-Youha, S., Jamal, M. H., Al-Haddad, M., Al-Muhaini, A., Al-Ghimlas, F., & Al-Sabah, S. (2020). Characteristics, risk factors and outcomes among the first consecutive 1096 patients diagnosed with COVID-19 in Kuwait. *EClinicalMedicine*, 24(6), 100448. <https://doi.org/10.1016/j.eclinm.2020.100448>
- Armbruster, S., & Klotzbücher, V. (2020). *Lost in lockdown? Covid-19, social distancing, and mental health in Germany*(No. 2020-04). Diskussionsbeiträge: Albert-Ludwigs-Universität Freiburg. <http://hdl.handle.net/10419/218885>
- Bayes, R., Bolsen, T., & Druckman, J. N. (2020). A research agenda for climate change communication and public opinion: The role of scientific consensus messaging and beyond. *Environmental Communication*, 14(1), 1-19. <https://doi.org/10.1080/17524032.2020.1805343>
- Bernays, E. L. (2015). *Crystallizing public opinion*. Open Road Media.
- Briscese, G., Lacetera, N., Macis, M., & Tonin, M. (2020). *Compliance with COVID-19 social-distancing measures in Italy: The role of expectations and duration* (No. w26916). National Bureau of Economic Research.
- Callow, M. A., Callow, D. D., & Smith, C. (2020). Older adults' intention to socially isolate once COVID-19 stay-at-home orders are replaced with "safer-at-home" public health advisories: A survey of respondents in Maryland. *Journal of Applied Gerontology*, 39(11), 1175-1183. <https://doi.org/10.1177/0733464820944704>
- Chae, S. H., & Park, H. J. (2020). Effectiveness of penalties for lockdown violations during the COVID-19 pandemic in Germany. *American Journal of Public Health*, 110(12), 1844-1849. <https://doi.org/10.2105/AJPH.2020.305903>
- Combs, S. E., Belka, C., Niyazi, M., Corradini, S., Pigorsch, S., Wilkens, J., Grosu, A. L., Guckenberger, M., Ganswindt, U., & Bernhardt, D. (2020). First statement on preparation for the COVID-19 pandemic in large German speaking university-based radiation oncology departments.

- Radiation Oncology*, 15(1), 74. <https://doi.org/10.1186/s13014-020-01527-1>
- Costa, M. F. (2020). Health belief model for coronavirus infection risk determinants. *Revista de Saúde Pública: Universidade de São Paulo*, 54, 47. <https://doi.org/10.11606/s1518-8787.2020054002494>
- De Neys, W., Raelison, M., Boissin, E., Voudouri, A., Bago, B., & Bialek, M. (2020). Moral outrage and social distancing: Bad or badly informed citizens? *PsyArXiv* <https://psyarxiv.com/j9h76>
- Digital Marketing Community. (2019). *Social Media Platforms Usage in Kuwait 2019*. <https://www.digitalmarketingcommunity.com/indicators/statistics-social-media-usage-in-kuwait-2019/>
- Gaber, H. R., & Elsamadicy, A. M. (2021). What drives customers to continue using ride-sharing apps during the COVID-19 pandemic? The case of Uber in Egypt. *Cogent Business & Management*, 8(1), 1–21. <https://doi.org/10.1080/23311975.2021.1944009>
- Hall, K. S. (2012). The health belief model can guide modern contraceptive behavior research and practice. *Journal of Midwifery & Women's Health*, 57(1), 74–81. <https://doi.org/10.1111/j.1542-2011.2011.00110.x>
- Han, X., Wang, J., Zhang, M., & Wang, X. (2020). Using social media to mine and analyze public opinion related to COVID-19 in China. *International Journal of Environmental Research and Public Health*, 17(8), 2788. <https://doi.org/10.3390/ijerph17082788>
- Heck, R. H., Thomas, S. L., & Tabata, L. N. (2013). *Multilevel and longitudinal modeling with IBM SPSS*. Routledge.
- Jose, R., Narendran, M., Bindu, A., Beevi, N., Manju, L., & Benny, P. V. (2021). Public perception and preparedness for the pandemic COVID 19: A health belief model approach. *Clinical Epidemiology and Global Health*, 9(7), 41–46. <https://doi.org/10.1016/j.cegh.2020.06.009>
- Karasneh, R., Al-Azzam, S., Muflih, S., Soudah, O., Hawamdeh, S., & Khader, Y. (2021). Media's effect on shaping knowledge, awareness risk perceptions and communication practices of pandemic COVID-19 among pharmacists. *Research in Social and Administrative Pharmacy*, 17(1), 1897–1902. <https://doi.org/10.1016/j.sapharm.2020.04.027>
- Kim, H. S., Ahn, J., & No, J. K. (2012). Applying the health belief model to college students' health behavior. *Nutrition Research and Practice*, 6(6), 551–558. <https://doi.org/10.4162/nrp.2012.6.6.551>
- Marsh, H. W., Guo, J., Dicke, T., Parker, P., & Craven, R. G. (2020). Confirmatory factor analysis (CFA), exploratory structural equation modeling (ESEM), and set-ESEM: Optimal balance between goodness of fit and parsimony. *Multivariate Behavioral Research*, 55(1), 102–119. <https://doi.org/10.1080/00273171.2019.1602503>
- Mason, A. N., Narcum, J., Mason, K., & Awan, U. (2021). Social media marketing gains importance after Covid-19. *Cogent Business & Management*, 8(1), 1870797. <https://doi.org/10.1080/23311975.2020.1870797>
- Mukhtar, S. (2020). Mental health and emotional impact of COVID-19: Applying health belief model for medical staff to general public of Pakistan. *Brain, Behavior, and Immunity*, 87(11), 28–29. <https://doi.org/10.1016/j.bbi.2020.04.012>
- Nacoti, M., Ciocca, A., Giupponi, A., Brambillasca, P., Lussana, F., Pisano, M., Goisis, G., Bonacina, D., Fazzi, F., Naspro, R., Longhi, L., Cereda, M., & Montaguti, C. (2020). At the epicenter of the Covid-19 pandemic and humanitarian crises in Italy: Changing perspectives on preparation and mitigation. *NEJM Catalyst Innovations in Care Delivery*, 1(2), 1. <https://doi.org/10.1056/CAT.20.0080>
- Nasir, E. F., Yagoub, H. M. A., & Alhag, A. K. (2020). Study of the Sudanese perceptions of COVID-19: Applying the health belief model. *medRxiv*, 1, 1–19. <https://doi.org/10.1101/2020.05.28.20115477>
- Nguyen, G. D., & Ha, M. T. (2021). The role of user adaptation and trust in understanding continuance intention towards mobile shopping: An extended expectation-confirmation model. *Cogent Business & Management*, 8(1), 1980248. <https://doi.org/10.1080/23311975.2021.1980248>
- Nomani, M. Z. M., Rauf, M., Ahmed, Z., Faiyaz, T., Khan, S. A., & Tahreem, M. (2020). Quarantine law enforcement & Corona virus (COVID-19) pandemic in India. *Journal of Xidian University*, 14(4), 536–542. <https://doi.org/10.37896/jxu14.4/068>
- Nowak, B., Brzóska, P., Piotrowski, J., Sedikides, C., Żemojtel-Piotrowska, M., & Jonason, P. K. (2020). Adaptive and maladaptive behavior during the COVID-19 pandemic: The roles of dark triad traits, collective narcissism, and health beliefs. *Personality and Individual Differences*, 167(37), 110232. <https://doi.org/10.1016/j.paid.2020.110232>
- Nueangnong, V., Hasan Subih, A. A. S., Al-Hattami, H. M., & Meer, R. (2020). The 2020's world deadliest pandemic: Corona Virus (COVID-19) and International Medical Law (IML). *Cogent Social Sciences*, 6(1), 1818936. <https://doi.org/10.1080/23311886.2020.1818936>
- Nutbeam, D., Harris, E., & Wise, W. (2010). *Theory in a nutshell: A practical guide to health promotion theories*. McGraw-Hill.
- Orji, R., Vassileva, J., & Mandryk, R. (2012). Towards an effective health interventions design: An extension of the health belief model. *Online Journal of Public Health Informatics*, 4(3), ojphi.v4i3.4321. <https://doi.org/10.5210/online.v4i3.4321>
- Park, H. M. (2015). *Univariate analysis and normality test using SAS, Stata, and SPSS*. 2015, The Trustees of Indiana University. <http://cef-cfr.ca/uploads/Reference/sasNORMALITY.pdf>
- Patma, T. S., Wardana, L. W., Wibowo, A., Narmaditya, B. S., Akbarina, F., & Awan, U. (2021). The impact of social media marketing for Indonesian SMEs sustainability: Lesson from Covid-19 pandemic. *Cogent Business & Management*, 8(1), 1953679. <https://doi.org/10.1080/23311975.2021.1953679>
- Pham, V. K., Do Thi, T. H., Ha Le, T. H., & Awan, U. (2020). A study on the COVID-19 awareness affecting the consumer perceived benefits of online shopping in Vietnam. *Cogent Business & Management*, 7(1), 1846882. <https://doi.org/10.1080/23311975.2020.1846882>
- Qazi, A., Qazi, J., Naseer, K., Zeeshan, M., Hardaker, G., Maitama, J. Z., & Khalid Haruna, K. (2020). Analyzing situational awareness through public opinion to predict adoption of social distancing amid pandemic COVID-19. *Journal of Medical Virology*, 92(7), 849–855. <https://doi.org/10.1002/jmv.25840>
- Reuben, R. C., Danladi, M. M., Saleh, D. A., & Ejembi, P. E. (2020). Knowledge, attitudes and practices towards COVID-19: An epidemiological survey in North-Central Nigeria. *Journal of Community Health*, 46(3), 457–470. <https://doi.org/10.1007/s10900-020-00881-1>

- Salleh, S. M. (2017). From survey to social media: Public opinion and politics in the age of big data. *Advanced Science Letters*, 23(11), 10696–10700. <https://doi.org/10.1166/asl.2017.10133>
- Saqlain, M., Munir, M. M., Rehman, S. U., Gulzar, A., Naz, S., Ahmed, Z., Tahir, A. H., & Mashhood, M. (2020). Knowledge, attitude, practice and perceived barriers among healthcare professionals regarding COVID-19: A cross-sectional survey from Pakistan. *Journal of Hospital Infection*, 105(3), 419–423. <https://doi.org/10.1016/j.jhin.2020.05.007>
- Sarwar, F., Panatik, S. A., & Sarwar, F. (2020). Psychology of preventive behavior for COVID-19 outbreak. *Journal of Research in Psychology*, 2(1), 1–3. <https://doi.org/10.31580/jrp.v2i1.1370>
- Schnitzer, M., Schöttl, S. E., Kopp, M., & Barth, M. (2020). COVID-19 stay-at-home order in Tyrol, Austria: Sports and exercise behaviour in change? *Public Health*, 185(49), 218–220. <https://doi.org/10.1016/j.puhe.2020.06.042>
- Toriro, P., Chirisa, I., & Shen, J. (2021). Vendors on wheels! The changing terrain and manifestation of informality in Harare under Covid-19 pandemic restrictions. *Cogent Social Sciences*, 7(1), 1939230. <https://doi.org/10.1080/23311886.2021.1939230>
- Wahed, W. Y. A., Hefzy, E. M., Ahmed, M. I., & Hamed, N. S. (2020). Assessment of knowledge, attitudes, and perception of health care workers regarding COVID-19, a cross-sectional study from Egypt. *Journal of Community Health*, 45(6), 1242–1251. <https://doi.org/10.1007/s10900-020-00882-0>
- Walrave, M., Waeterloos, C., & Ponnet, K. (2020). Adoption of a contact tracing app for containing COVID-19: A health belief model approach. *JMIR Public Health and Surveillance*, 6(3), e20572. <https://doi.org/10.2196/20572>
- Walter-mccabe, H. A. (2020). Coronavirus pandemic calls for an immediate social work response. *Social Work in Public Health*, 35(3), 69–72. <https://doi.org/10.1080/19371918.2020.1751533>
- Wang, J., Xu, C., Wong, Y. K., He, Y., Adegnik, A. A., Krensnier, P. G., Agnandji, S. T., Sall, A. A., Liang, Z., Qiu, C., Liao, F. L., Jiang, T., Krishna, S., & Tu, Y. (2020). Preparedness is essential for malaria-endemic regions during the COVID-19 pandemic. *The Lancet*, 395(10230), 1094–1096. [https://doi.org/10.1016/S0140-6736\(20\)30561-4](https://doi.org/10.1016/S0140-6736(20)30561-4)
- Wong, L. P., Alias, H., Wong, P. F., Lee, H. Y., & AbuBakar, S. (2020). The use of the health belief model to assess predictors of intent to receive the COVID-19 vaccine and willingness to pay. *Human Vaccines & Immunotherapeutics*, 16(9), 2204–2214. <https://doi.org/10.1080/21645515.2020.1790279>
- Zeb, S., Hussain, S. S., Javed, A., & Wu, Y. C. J. (2021). COVID-19 and a way forward for restaurants and street food vendors. *Cogent Business & Management*, 8(1), 1923359. <https://doi.org/10.1080/23311975.2021.1923359>



© 2022 The Author(s). This open access article is distributed under a Creative Commons Attribution (CC-BY) 4.0 license.

You are free to:

Share — copy and redistribute the material in any medium or format.

Adapt — remix, transform, and build upon the material for any purpose, even commercially.

The licensor cannot revoke these freedoms as long as you follow the license terms.

Under the following terms:

Attribution — You must give appropriate credit, provide a link to the license, and indicate if changes were made.

You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use.

No additional restrictions

You may not apply legal terms or technological measures that legally restrict others from doing anything the license permits.

***Cogent Business & Management* (ISSN: 2331-1975) is published by Cogent OA, part of Taylor & Francis Group.**

Publishing with Cogent OA ensures:

- Immediate, universal access to your article on publication
- High visibility and discoverability via the Cogent OA website as well as Taylor & Francis Online
- Download and citation statistics for your article
- Rapid online publication
- Input from, and dialog with, expert editors and editorial boards
- Retention of full copyright of your article
- Guaranteed legacy preservation of your article
- Discounts and waivers for authors in developing regions

Submit your manuscript to a Cogent OA journal at www.CogentOA.com

