Online Buying Behavior during the Coronavirus Pandemic: Insights from Bangladeshi Consumers

Dr. Md. Bashir Uddin

Associate Professor

Department of Management Studies, Bangabandhu Sheikh Mujibur Rahman Science and Technology University-Bangladesh.

ABSTRACT: Coronavirus (COVID-19) affects different people in different ways. Most infected people will improve slight to moderate illness and recover without hospitalization. Thus, coronavirus (COVID-19) is much more than a health crisis. By stressing every one of the nations it touches, it has the potential to create devastating social, economic and political crises that will leave deep scars. Today, e-marketing is a dynamic instrument for diminishing streaming business procedures, managerial costs, cycle time, maintain social distancing, stay at home, protect from virus, and illuminating relationships with both consumers and business partners. Due to pandemic situation, business are trying to practice an alternative and emerging approach like online marketing. Therefore, the research discussed to study the influential aspects of consumers' buying behavior towards online during the coronavirus (COVID-19) pandemic in the context of Bangladesh. The research adopted the quantitative analysis of influential aspects, such as disease, payment, price, administrative, and product that might affect buying behavior towards online during the coronavirus (COVID-19) pandemic. Descriptive research was followed to conduct the research. Data were collected through a structured questionnaire from 221 samples which consist of genuine online consumers from different online shops in Bangladesh. The data were analyzed through structural equation modeling (SEM) using smartPLS software version 3.0. Results demonstrated that among five aspects, all aspects except price, and administrative had a positive and significant influence on buying behavior towards online during the coronavirus (COVID-19) pandemic in Bangladesh. It is recommended that the research will be added value and contributed to the academic literature part of digital marketing because it develop a exclusively original conceptual model explanation the aspects that affect buying behavior towards online in the context of coronavirus (COVID-19) pandemic situation in Bangladesh.

KEYWORDS: COVID-19, online shopping, consumers' behavior, influential aspects, Bangladesh

I. INTRODUCTION

The coronavirus (COVID-19) pandemic is a large own family of viruses that causes contamination starting from the common bloodless to more extreme sickness inclusive of Middle East Respiratory Syndrome (MERS-CoV) and severe acute respiratory syndrome (SARS-CoV). A novel coronavirus (COVID-19) is a brand-new pressure that has not been formally recognized in people. Coronavirus is zoonotic, which means they're transmitted between animals and those. Comprehensive studies found out that SARS-CoV changed into transmitted from civet cats to people and MERS-CoV from dromedary camels to human beings. Several regarded coronaviruses is circulating in animals that have not but inflamed humans. Common ciphers of infection take account of respiratory signs and symptoms, fever, cough, shortness of breath, and respiration problems. In extra severe instances, the infection can purpose pneumonia, intense acute breathing syndrome, kidney failure, or even death. Standard pointers to prevent infection unfold consist of everyday hand washing, protecting mouth and nostrils when coughing and sneezing, and methodically cooking meat and eggs. Avoid near interaction with every person displaying symptoms of breathing illness together with coughing and sneezing (World Health Organization). The COVID-19 pandemic in Bangladesh is part of the worldwide pandemic of coronavirus ailment (COVID-19) due to extreme acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The coronavirus (COVID-19) changed into confirmed to have spread to Bangladesh in March 2020. On 23 March, whilst Bangladesh had 33 shown cases, the government declared a ten-day national vacation for the duration of 26 March - four April, ordering all public and private offices to be closed, with the exception of emergency offerings. People had been requested to practice social distancing and live at home. Public transport could be restricted and recommendations become given to keep away from them. The degree has been elucidated as a lockdown through the media, albeit a comfy one. The government requested the navy to implement social distancing. ABC News Australia said that 290 teams of infantrymen have been arranged throughout u. S ., that roads were empty in

The capital Dhaka and the roadside stores have been closed and also all buying malls of different towns were closed in Bangladesh. Moreover, it stated that hundreds of human beings left Dhaka for his or their home villages (IEDCR). Due to the coronavirus (COVID-19) pandemic state of affairs, world exchange & commerce, training & other activities had been interrupted. The global supply chain has been broken down for nations' lockdown conditions. As a growing us of a Bangladesh has been struggling parallelly by this outbreak. The Trade & trade establishments of Bangladesh have to face notable losses (Bhuiyan, M.S.A., 2020). E-commerce is electronic transactions that can be articulated as the buying & promoting of products & services and as nicely the switch of budget, money, statistics & facts associated with the industrial transactions through the internet by using the use of facts & communication era. Basically, the e-commerce government buys and promotes the physical merchandise & offerings thru an internet platform which made comforts the industrial transaction of all classes of companies and purchasers. Consumers can capable of making an income & buy at any time from any place (Business encyclopedia).

Nowadays, e-commerce in Bangladesh is growing day by day. Compared to preceding years, net connection and facts generation have been developed a great deal that are the essential elements for the e-commerce platform. During the yr 2016, the overall investment in e-commerce in Bangladesh becomes $50 million wherein $10 million turned into Foreign Direct Investment (FDI). In 2017, the e-trade marketplace turned into almost $one hundred fifteen million. The e-Commerce Association of Bangladesh predicted that the e-trade enterprise marketplace could be extra than & 70 billion in 2021. The state of affairs discloses that the e-commerce business in Bangladesh developing through the years (Khan, S.S., 2020). Almost all categories of business businesses are trying to adopt online transactions and Bangladesh has an outstanding destiny in e-commerce. Business capabilities, which include finance, manufacturing, transportation, charge structures, digital fund transfer, supply chain management, net advertising, online transaction processing, digital statistics interchange, automated stock control structures, and automatic records series systems have a widespread effect on e-commerce in Bangladesh. It aids to innovate new ideas and provides a modern prospect of doing business. As a result, e-commerce has a deep impact on enterprise entities and effects appreciably (Islam, 2015; Mohiuddin, 2014). The e-trade commercial enterprise is being decided into important regulations because of the stress from the pandemic of coronavirus (COVID-19). Even even though more and more COVID-19 cases is leading extra people to choose for online buying, the pandemic and next international economic stagnation have moderated the buying power of most people, mainly the middle and lower-center training. The coronavirus (COVID-19) pandemic additionally disrupted the global delivery chain and brought about the transient shutting down of all non-critical offerings in Bangladesh, together with small style stores lots of which bought a huge element of their merchandise online (Syfullah, M., 2020). The government of Bangladesh has already taken been numerous tasks and activities to increase and sell e-commerce and additionally ensure quite a few facilities and supportive organs in order that enterprise companies can capable of cope with the fast growth of e-commerce (Bhowmik, 2012).

The broad objective of the research is to investigate the influential aspects of consumers' buying behavior towards online during the coronavirus (COVID-19) pandemic in context of Bangladesh. There are some specific objectives of the analysis such as:

- To assess the behavior pattern of consumers towards online.
- To explore the impacts of COVID-19 pandemic on buying behavior.
- To examine the disease, payment, price, administrative, and product aspects on buying behavior towards online during the coronavirus (COVID-19) pandemic in the context of Bangladesh.

The research is allocated into the following sections. Firstly, the literature review is provided based on past study. Secondly, conceptual model and hypotheses development for the present research. Thirdly, research methods are enlightened which are applied on the current research. Fourthly, the paper is presented with the findings and discussions. Fifthly, conclusion and implications of results in the related to platforms. The last section concludes while pointing to the present limitations and future directions of research.

II.   LITERATURE REVIEW

Online buying behavior : Consumer conduct is the study of individuals, groups, or businesses and the procedures they use to select, comfy, and cast-off merchandise, offerings, reports, or thoughts to satisfy needs and the impacts that these techniques have at the purchasers and society (Kuester, 2012). Consumers shopping for decision-making idea can be outstanding as a continuum prolonging from ordinary trouble-fixing conduct, thru to constrained problem-fixing behavior and then towards enormous problem-solving behavior (Schiffman et al., 2001). Online buying is the method clients use to buy a service or product over the net. Online shopping for is the manner of buying items and services from merchants who sell on the net. Consumers visit internet

stores from the consolation of their homes and store as they sit down in the front of the computer. Online customers' behavior lightened that the maximum appropriate behavioral appearances of on-line clients and examine the methods they find, associate and estimate product facts. Assessment of survey statistics with the existing clients' performance idea stemmed in detection of a number of troubles associated with a clean client's institution (Petrovic Dejan, 2006). Business to Business as something that consist of flow of products from seller to producers and outlets. B2B communique denotes the bigger department of complete enterprise hobby. The look at is acknowledged that in the sort of ecommerce, consumers may additionally use net for different purposes like looking the product features, over checking the charge worries, selecting the product or service, deciding on the manner of paying, determining upon transport options and at the quit sale of service or product is performed (Khiabani, 2006). Tian and Stewart (2007) electronic trade signify not only the enterprise of products and offerings, however additionally preserving purchasers, producing relationships with purchasers and different corporations and making corporations with them. Online buying can be determined as interest that deals with selling of products and offerings thru net, and for corporations is sizable to be conscious of how consumers understand online shopping for. Nowadays, scholars are forecasting that in a soon period e-commerce may want to easily take location in location of conventional business (Heng and SH., 2003).

Disease : The COVID-19 pandemic, social distancing and staying home is further anticipated to drive the consumers towards online buying. Nevertheless, uncertain consumers' demand and supply chain issues can affect the e-commerce industry. The COVID-19 pandemic issue can also affect big merchants such as Walmart, which are experiencing a drop in casual buying, supply chain disruption, and an increase in purchases of vital toiletries, groceries, and other products. The worldwide e-commerce industry report is segmented based products including electronics, healthcare beauty & personal care and others. The outbreak of COVID-19 had an influence on these segments because of the uncertainty in the supply chain and consumer demand across the world. E-commerce supply chains are mainly strained by COVID-19 in addition to factory closures in China, the US, and other countries (Research and markets, 2020). Disease would reach nearby municipalities first, but likewise distant municipalities with high air travel volumes; a pandemic starting in Hong Kong can now spread quickly to northern hemisphere municipalities 111 days earlier than in 1968 (Grais et al., 2003). A drop of 12 million arrivals to Asian and Pacific countries following the outbreak of the avian flu epidemic has been assessed (Wilder-Smith 2006). Turning to the effects of disease on destinations, the recent avian flu and severe acute respiratory syndrome (SARS) epidemics are good examples of outbreaks that have had a big media impact with important health policy controversies in recent years (Pongcharoensuk et al. 2012). A temporary disease with significant effects on online buying was the impact of foot and mouth disease on consumers' expenses (Blake et al. 2003). Malaria and Dengue are the most prevalent pathogens among ill returned travellers; diseases that could probably be contested through specific health strategies to eliminate them (Freedman et al. 2006). The incidence of Dengue has been measured to be higher than that of other so-called distinctive travel-related diseases, such as vaccine-preventable hepatitis and typhoid fever (Gautret, et al. 2009). Consumers demand pattern are fluctuating, worldwide supply chains are interrupted and continue under pressure, and several regions, markets and governments are answering entirely to the COVID-19 disaster (Accenture, 2020).

Payment : E-payment system has vital effects on buying behavior of retail outlet consumers because it lets in wider coverage of commercial transactions and amplified customer satisfaction. The have a look at recommends that retail outlet operators need to enhance higher methods to reply to new orders of commercial enterprise transactions with a sure degree of creativity and innovativeness. Mobile payment, additionally called Mobile wallet, is an alternative price approach the use of a cellular telephone for reimbursement of financial transactions (Atarere, & Osemwegie-Ero, 2014). E-charge gadget performs an impressive position within the patron shopping for conduct of shops clients because it enables to increase customers' pleasure by permitting more facilities of worldwide trade & trade transactions. Online buying is the customers thru for the net to locate the statistics they want to buy the product, and then issue a purchase request through the net buying platform, the crowning glory of buying activities inside the process of on-line price or coins on shipping (Adebayo, et al., 2017). E-price device refers to an digital fee device that lets in users to transact electrically anywhere within the world (Humphrey, D.B. Et al., 1996). With the start of records era that gave start to the internet, the worldwide economic system is taking a new size via the use of digital cash as criminal gentle for enterprise transactions and exchanges. Recent improvement in generation for the economic transaction has increasingly fueled the use of digital-primarily based fee devices globally (Princewell, & Anuforo, 2013). The studies is mentioned that the power of the cardboard system lies in its superiority and acceptability to keep and manipulate data in conjunction with the coping with of multiple applications on one card strongly (Olanipekun, et al., 2013).

Price : Price is one of the significant aspects which plays a vital role in brand switching, price is the amount that consumers pay for any product or service while buying or consuming of that product or service (Kotler, &

Armstrong (2010). Price can express as money that is charged for using products or services or the amount of value that has to pay consumers for getting, buying, or using products or services (Kotler & Armstrong, 2012). The number of money consumers pay to get the product or service (Sharma K 2008). An element that affects the volume of sales consists of influential pricing objectives and policies, price fixation, discount policy, credit policy, etc. (Jain, A., 2013). The results exhibit that only the pricing strategy has a positive influence on consumers' motives to purchase, while the promotion strategy has a significant negative effect on consumers' motives (Munusamy & Hoo, 2008). Oh, H. (2000) indicated that the traditional consumer value process is useful for lodging study and marketing. Moreover, brand awareness and price fairness concepts were found to play significant roles in the consumer value process. Sinha, I., & Batra, R. (1999) specified that perceived category risk and perceived price unfairness of national brands in that category are important experiences of consumer price awareness, and that differences in such price awareness across classes are a significant reason why consumers buy private label brands (PLBs) more in some types than in others. The research is studied that the prices have the greatest influence on consumers buying music products. Price becomes a key consideration for consumers to buy music products, due to the possibility of consumers who want to spend money for a song that they like (Kusumawati, et al., 2014). The study is found the association between consumers buying behavior, product price, and product quality, and designated that there is a significant and positive association between price and buying behavior but there is a negative association between quality on buying behavior (Rajput et al., 2012).

Administrative : Governmental support may be taken into consideration an influential thing of e-commerce in a country (Kabango, 2011). The government can assist e-commerce by taking financial & tax coverage, manual coverage, change price coverage, and administrative help that could accelerate e-commerce development (Nelson & Soete, 1988). The government is devoted to encouraging e-trade websites (Licker, 2005). The government is an outside environment that assists in growing the e-trade platform and it impacts positively within the mind of customers to shop for on line (Hai & Kamal, 2015). In a growing usa, the government plays a vital position in developing & selling e-commerce sites. The authorities can provide on line charge protection, building robust ICT infrastructures that can absolutely be available for all. Eid (2011) discovered that the Saudi government helped to promote nearby e-trade websites which were observed as a vital issue of growing on line buying in Saudi Arabia & people have to accept as true with in governmental sports. Governments and administrations are requisite to effort towards achieving sustainability online shopping for and the triple backside line that is people, planet, and profit (Elkington, 1997) to be maintainable shopping for sample in the upcoming. All sports regarding government dreams in undertaking sustainability need an obligation from every and everybody within the public as to take care of and upgrade the nicely-being of the civilization. Government legislative techniques are required to take a extra lively and main function to inspire or even pressure extra on-line challenge (Dummett, 2006). Governments' aid definitely influences on perceived ease of on-line buying and undoubtedly impacts customers' online shopping for intentions. Government is one of the outside environments but a vital factor in many distinct methods that have an effect on commercial enterprise (Hai & Kazmi1, 2015). Government guide techniques include monetary and tax coverage assist, authorities' procurement, financial and foreign exchange rules to aid the industry to guide coverage assist, administrative help, and so forth policy making. Government organizations are the maximum effective and influential aspect of authentic innovation power (Nelson, & Soete, 1988).

Product: The product can be anything such as a good, service, people, place, idea, information & organization that pursue attention and attempt to satisfy the needs, wants, or desires of the consumers. Good quality of the product can be defined as a defect-free & fault-free product that can be recognized by eight vital dimensions. Such as product performance, product features, reliability of the product, confirmation of product, the durability of product, serviceability, aesthetics & perception of quality (Tjiptono, 2008). The effect of product attributes on mobile phone preference among consumers. The study designated that varying the product attributes has an impact on the consumers' preferences on mobile phones. Several aspects of product and brand attributes were considered such as color themes, visible name labels, and mobile phones with a variety of models, packaging for safety, degree of consciousness on safety issues, and look and design of the phone (Malasi, 2012). Product is one of the stiffest prognosticators, there are two perceptions that will lead to high levels of buying behavior and repeat buying at the last, and those perceptions are high product quality and high consumer satisfaction (Satit, R.P., 2012). Consumers buy more quantity of the products, after looking a well-labeled product. Thus, labeling affects, consumers, and buying behavior, but there are some other aspects also, which affect on the consumer's buying behavior (Saeed, et al., 2013). Each and every product must meet the needs of a particular target market consumers' expectations (Goi, 2009). The seven P's of marketing and choice of a key grocery store in a hyperinflationary economy found that product has an important influence on consumers' choice of store for main grocery buying (Muzondo, N., & Mutandwa, E., 2011).

The study is proved that most of the consumers come to convenience stores because of the product quality provided (Andreti, et al., 2013). Product quality summarizes retailers' reputation and effects on consumers buying behavior at stores (Pan, & Zinkhan, 2006). Product quality and product features are the most common aspects of consumers' buying behavior (Mashao, & Sukdeo, 2018; Hossain & Khan, 2018).

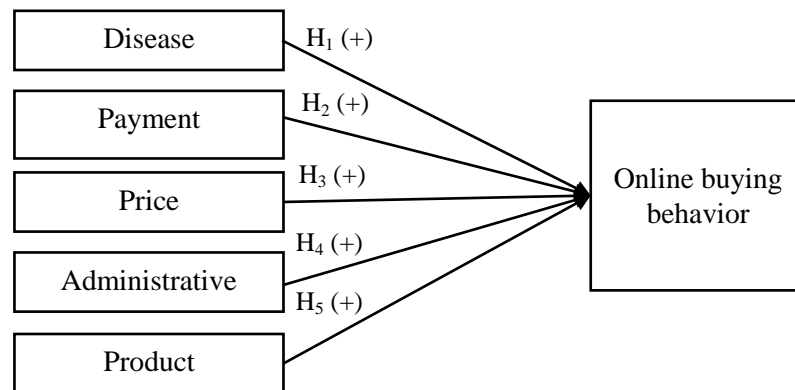### III. CONCEPTUAL MODEL AND HYPOTHESES DEVELOPMENT

Figure 1. Conceptual model

From the above discussion, five hypotheses (from H_1 to H_5) were formulated (Figure 1).

H_1: Disease and online buying behavior are positively related to each other.
H_2: Payment and online buying behavior are positively related to each other.
H_3: Price and online buying behavior are positively related to each other.
H_4: Administrative and online buying behavior are positively related to each other.
H_5: Product and online buying behavior are positively related to each other.

IV. RESEARCH METHODS

Sampling design and data collection : The participants of the study include 221 consumers with at least one-time buying products through online during the COVID-19 pandemic in several online shops in Bangladesh. Individual respondent was the unit of analysis in the study. A quantitative survey method has been followed to conduct the research and data were collected through a structured questionnaire. An online convenience and judgmental sampling survey was conducted for testing the hypotheses. Data were collected from consumers of several online sites through this online survey which was also applied in other researches as well (Hajli, 2014; Kushwaha & Agrawal, 2015; Alam, J., 2020). The respondents were asked to demonstrate their degree of agreement or disagreement with every statement based on their respective online shops service practice. A total of 221 respondents filled up the questionnaire online from the month of May to Jun 2020. After careful review of the returned answers, 27 questionnaires were rejected because of incomplete information and 194 responses were considered for statistical analysis. The sample consists of 32% male and 64% female. Thus, female is highly interested to buy through online during the coronavirus (COVID-19) pandemic. 96% consumers in urban areas and 4% consumers in rural areas. Hence, urban areas consumers are decided to buy through online. 72% consumers are service holders and 28% others occupation. As a result, service holders are concerned to buy through online during the COVID-19 pandemic. Also 65% consumers and their income level BDT. 30-50 thousand, and 35% consumers in others income level. Therefore, higher income Bangladeshi consumers are decided to buy through online during the coronavirus (COVID-19) pandemic. Respondents are the consumers of around 10 online shops consisting of Daraz.com.bd, Rokomari.com, Bagdoom.com, Pickaboo.com, KhaasFood, Othoba.com, Sheba.xyz, Chaldal.com, PriyoShop.com, and others online stories in Bangladesh.

Measurement instrument : The scale items for measuring the influential aspects of consumers' online buying behavior during the coronavirus (COVID-19) pandemic were adopted form Sinjanakhom, M.T. (2016); Mahendratmo, B. P.J., & Ariyanti, M. (2019); Kim, K., et al. (2013); Ariff, M. S. M. (2013); Hossain, A., et al. (2018); Nguyen, H.V. et al. (2020); Rahman, M. A. et al. (2018); Bhowmik (2012); Shaw, R. (2020); Bhuiyan, M.S.A. (2020); Alam. J. (2020); Syfullah, M. (2020) where the items were found reliable and valid. The latent constructs and their observed variables are shown in Table 1. The first section of the questionnaire includes general information of the participants (consumers) such as, email account, gender, residential place, occupation, and income.

The second section includes questions related to the influential aspects of consumers' online buying behavior during the COVID-19 pandemic. Participants were asked to rate their degree of agreement or disagreement on a 5-point Likert scale ranging from strongly disagree to strongly agree. Before finalizing the questionnaire, a pretesting was done on 10 respondents.

Table 1. Constructs and measured variables

Constructs	Measured variables	Source
Disease	Social distancing	Sinjanakhom, M.T. (2016); Mahendratmo, B. P.J., & Ariyanti, M. (2019); Kim, K., et al. (2013); Ariff, M. S. M. (2013); Hossain, A., et al. (2018); Nguyen, H.V. et al. (2020); Rahman, M. A. et al. (2018); Bhowmik (2012); Shaw, R. (2020); Bhuiyan, M.S.A. (2020) & Alam. J. (2020); Syfullah, M. (2020).
	Stay at home	
	Protect from virus	
Payment	Safe and secure website	
	Suitable system	
	Convenience transaction	
Price	Reflection of performance	
	Delivery charge	
Administrative	Lockdown	
	Administrative support	
Product	Quality of products	
	Variety of products	
	Branding products	
Online buying behavior	Decide to buy through online	
	Recommend to others.	

Data Analysis : Data collected through questionnaire were analysed using smartPLS software version 3. Structural equation modeling (SEM) was used to test the conceptual model of the study. Frequency distribution and percentile measures were used primarily for sample distribution. Mean, and standard deviation measures were used to test the descriptive statistics. Collinearity statistics had been used to test multicollinearity among the independent variables. Moreover, the reliability of the scale items was established through the score of Cronbach's alpha coefficients and composite reliability (CR). Similarly, Discriminant validity had been used to test Fornell-Larcker Criterion and Heterotrait-Monotrait ratio (HTMT) among the independent variables and dependent variable.

V. FINDINGS AND DISCUSSIONS

Table 2. Descriptive statistics

Influential aspects	Mean	Std. Deviation	Rank
Disease	3.97	0.90	1
Payment	3.14	0.81	4
Price	3.03	0.99	5
Administrative	3.56	0.94	3
Product	3.91	0.87	2

Descriptive analysis : All the independent variables were mainly analyzed using the scores of mean and standard deviation. The aspects were ranked based on their calculated mean values. As illustrated in Table 2, disease generated the highest mean score (M=3.97) whereas price had the lowest mean score (M=3.03). All aspects generated moderate mean scores. It was suggested that payment and price had larger variation among other aspects.

Table 3. Multicollinearity Test

Constructs	Collinearity Statistics	
	Tolerance	VIF
Disease	.704	1.421
Payment	.699	1.430
Price	.560	1.785
Administrative	.568	1.760
Product	.416	2.402

Multicollinearity test : Multicollinearity test is used to see whether the independent variables are highly correlated among themselves. The collinearity among the predictor constructs affects the estimated path coefficients (Hair et al., 2019). Variance inflation aspect above 5 and tolerance below 0.10 indicates a presence of inter predictor constructs collinearity (Hair et al., 2019). As illustrated in Table 3, the results of collinearity statistics showed that all VIF and tolerance values are within an acceptable range. It indicated that multicollinearity would not interfere with independent variables' ability to interpret the outcome variable.

Table 4. Measurement Model Summary

Construct	Items	Factor Loading	AVE	CR	Cronbach's α
Disease	Disease1	0.807	0.567	0.790	0.712
	Disease2	0.878			
	Disease2	0.527			
Payment	Payment1	0.719	0.555	0.714	0.729
	Payment2	0.610			
	Payment3	0.690			
Price	Price1	0.848	0.738	0.849	0.695
	Price2	0.870			
Administrative	Administrative1	0.941	0.874	0.933	0.856
	Administrative2	0.929			
Product	Product1	0.733	0.535	0.775	0.765
	Product2	0.758			
	Product3	0.702			
Online buying behavior	Buying1	0.866	0.771	0.871	0.704
	Buying2	0.890			

Unidimensionality: Unidimensionality aspects of constructs designate that each measurement item has an acceptable level of factor loading with the respective latent construct. As recommended by Hair et al. (2019), each construct should have measurement items with a minimum factor loading of 0.70. As illustrated in Table 4, only three items such as, disease3, payment2, payment3 have a factor loading of 0.527, 0.610 and 0.690. However, as it is close to 0.70, the items have been recollected. Thus, the unidimensionality of the measurement model has been established.

Convergent validity: Convergent validity is determined by average variance extracted (AVE) having value above 0.50 (Hair et al., 2019). An AVE of 0.50 or more means that the latent construct accounts for 50% or more of the variance in the observed variables, on the average. As illustrated in Table 4, all the AVE values fall within the acceptable level and thus, the constructs are valid for further analyzes.

Construct reliability: Construct reliability indicates the reliability of the internal consistency of each latent construct (Hair et al., 2019). Cronbach's alpha value is widely used for assessment of construct reliability so is composite reliability (CR). According to Hair et al. (2019), a satisfactory level of Cronbach's alpha and composite reliability value is between 0.70 and 0.95. As illustrated in Table 4, all composite reliability and all Cronbach's alpha values except price aspect (0.695) fall within the acceptable level and thus, the constructs are reliable for further analyzes because of less Cronbach's alpha values.

Table 5. Discriminant validity: Fornell-Larcker Criterion

	Administrative	Disease	Online buying	Payment	Price	Product
Administrative	0.935					
Disease	0.381	0.753				
Online buying	0.528	0.529	0.878			
Payment	0.611	0.292	0.514	0.675		
Price	0.472	0.462	0.450	0.449	0.859	
Product	0.612	0.544	0.596	0.542	0.626	0.731

Note: Diagonal elements are the square root of AVE and off-diagonal elements are correlations among constructs.

Discriminant validity: Discriminant validity is utilized to evaluate the extent to which a construct is distinct from other constructs (Hair et al., 2019). Discriminant validity is achieved if the square root of AVE is greater than the inter construct correlations. As illustrated in Table 5, the discriminant validity is accomplished for the research constructs.

Table 6. Heterotrait-Monotrait ratio (HTMT)

	Administrative	Disease	Online buying	Payment	Price
Disease	0.499				
Online buying	0.675	0.772			
Payment	0.870	0.554	0.892		
Price	0.640	0.709	0.668	0.814	
Product	0.887	0.804	0.843	.720	1.044

Heterotrait-Monotrait ratio : Another measure called heterotrait-monotrait ratio (HTMT) of correlations has been recommended to determine discriminant validity in PLS-SEM (Hair et al., 2019). HTMT criterion is used to estimate the true correlations between two constructs. The maximum recommended HTMT value of 0.90 is suggested and above 0.90 indicates a lack of discriminant validity (Hair et al., 2019). As illustrated in Table 6, except HTMT value between product and price (1.044), all other values are below 0.90 and therefore, discriminant validity is ensured.

Assessment of structural model : Bootstrapping is a process of taking a large number of subsamples (e.g., 5000) from the original sample with replacement to give bootstrap standard errors, which in turn provides approximate t-values for significance testing of the structural path. To estimate the structural model, a bootstrapping procedure with a subsample of 1000 has been applied (Ringle et al., 2015).
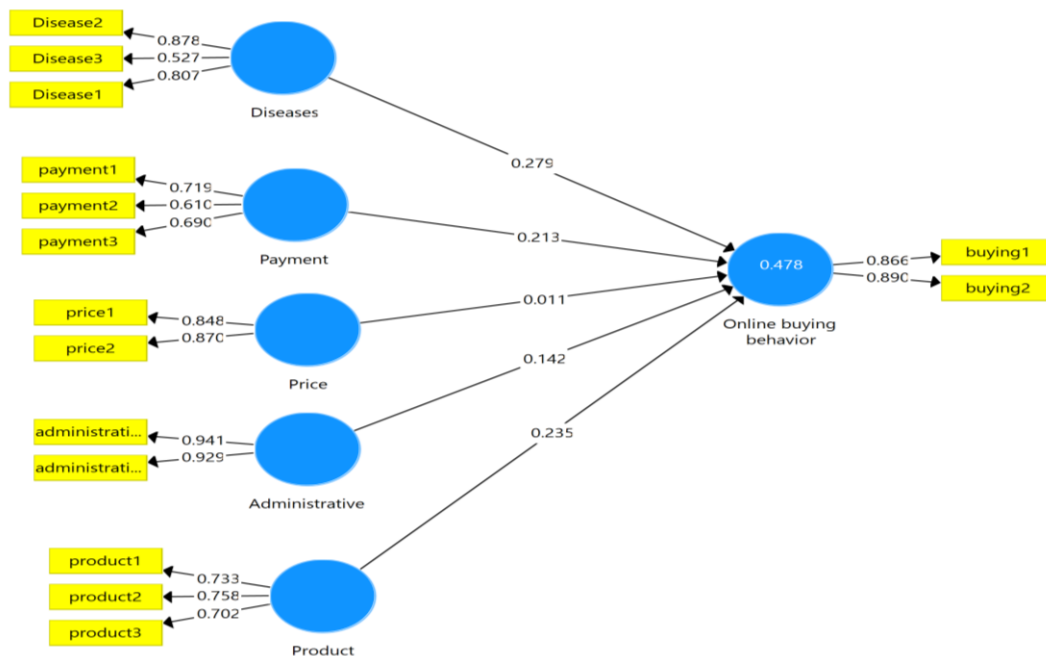

Figure 2. Structural Model

As illustrated in Figure 2, The R^2 value of 0.478 designates that around 47.8% variance in online buying behavior is accounted for by all the exogenous constructs. Likewise, Table 7 and Figure 2 showed that all the path coefficients (β), t-values, p-value and significance of the structural paths. The hypotheses were tested using a two-tailed t-test with a significance level of 5% where the path coefficient will be significant if t-value exceeds 1.96. The results designated that three out of five aspects were significantly related to online buying behavior during the coronavirus (COVID-19) pandemic.

In contrast, the rest of the two aspects had no significant relationship with online buying behavior during the coronavirus (COVID-19) pandemic. Disease (β_1=0.279, t=3.791), payment ((β_2= 0.213, t= 2.715) and product (β_5= 0.235, t=2.691) were significant at p<0.05. Therefore, the hypotheses H_1, H_2, and H_5 were accepted. Conversely, H_3, and H_4 were rejected as price, and administrative had no significant relationship with online buying behavior during the coronavirus (COVID-19) pandemic.

Table 7. Structural Model Estimates

Path	Coefficients (β)	t-values	p-values	Results
H_1: Disease → Online buying behavior	0.279	3.791	0.000*	Accepted
H_2: Payment → Online buying behavior	0.213	2.715	0.007*	Accepted
H_3: Price→ Online buying behavior	0.011	0.147	0.884	Rejected
H_4: Administrative → Online buying behavior	0.142	1.628	0.104	Rejected
H_5: Product → Online buying behavior	0.235	2.691	0.007*	Accepted

Note: p* < 0.05, based on the two-tailed test; t = 1.96.

VI. CONCLUSION AND IMPLICATIONS

The e-commerce area of the nation has started feeling the brunt of coronavirus (COVID-19), activating panic amid the worldwide pandemic. E-commerce has significantly impacted as both rational and irrational fears take hold because of the worldwide outbreak of coronavirus (COVID-19). Online orders have dropped radically since the first identification of coronavirus (COVID-19) cases in the country. E-commerce companies that import goods or raw materials from China are unsure regarding the influence of the virus on the supply chain and product demand. A number of vendors are dropping their sales predictions for the current year as they are still in the dark about the enduring effect of the coronavirus (COVID-19). Many of them have already altered their 2020 viewpoint from a positive to a negative one-they anticipate the sale and revenue to fall. E-commerce sites selling daily necessities and health products, such as masks and sanitisers, have seen a spike in their sales. But fashion, IT services, cosmetics, and sellers of other imported products have taken a success. The government should act quickly to allocate further resources to healthcare infrastructure improvement to challenge the coronavirus (COVID-19) pandemic. Up till now, there is no vaccination for the coronavirus (COVID-19). Therefore, isolation and lockdown are the only means to stop the spread of this deadly virus. The exceptional coronavirus (COVID-19) pandemic has affected disruptions to worldwide trade, business, and education. Bangladesh is correspondingly affected by this infection.

The economic significances of the coronavirus (COVID-19) pandemic are hard to handle as the whole of the worldwide supply chain has been disturbed due to global transportation shutdown (Bhuiyan, M.S.A., 2020). Bangladesh is currently categorized as a least developed country (LDC). But the last three decades have been marked by the country accomplishing important economic growth and poverty reduction. In recent time the rate of growth has been increasing around 7-8 percent per annum which has boosted Bangladesh to be suitable to become a developing country by next year (2021). Nowadays, the economic downturn caused by the coronavirus (COVID-19) pandemic is prospective to put that ambition on hold (Muhammad Mahmood, 2020). The e-commerce market of Bangladesh is identified to be USD 1.6 billion and is anticipated to double to USD 3 billion by the year 2023. Bangladesh's government enforced a 7.5 percent VAT on this area that may badly affect the continuing digitization agenda of the government and impede the employment rate in this area according to industry insiders. In terms of revenue from e-commerce, Bangladesh categorized 46th position worldwide. Increasing smartphone infiltration and popularity of 4G networks along with the increasing buying power of consumers are driving the e-commerce industry across the world comprising this south Asian country, Bangladesh. With the start of COVID-19, the e-commerce industry is observing a peculiar increase internationally and with the world heading into a foreseeable worldwide recession, the development of the industry is bound to slow down (Kightcastle Analytics Wing).

Coronavirus (COVID-19) affects different people in different ways. Most infected people will improve slight to moderate illness and recover without hospitalization. Thus, coronavirus (COVID-19) is much more than a health crisis. By stressing every one of the nations it touches, it has the potential to create devastating social, economic and political crises that will leave deep scars. Today, e-marketing is a dynamic instrument for diminishing streaming business procedures, managerial costs, cycle time, maintain social distancing, stay at home, protect from virus, and illuminating relationships with both consumers and business partners. Due to pandemic situation, business are trying to practice an alternative and emerging approach like online marketing.

Therefore, the research discussed to study the influential aspects of consumers' buying behavior towards online during the coronavirus (COVID-19) pandemic in the context of Bangladesh. The research adopted the quantitative analysis of influential aspects, such as disease, payment, price, administrative, and product that might affect buying behavior towards online during the coronavirus (COVID-19) pandemic. Descriptive research was followed to conduct the research. Data were collected through a structured questionnaire from 221 samples which consist of genuine online consumers from different online shops in Bangladesh. The data were analyzed through structural equation modeling (SEM) using smartPLS software version 3.0. Results demonstrated that among five aspects, all aspects except price, and administrative had a positive and significant influence on buying behavior towards online during the coronavirus (COVID-19) pandemic in Bangladesh. It is recommended that the research will be added value and contributed to the academic literature part of digital marketing because it develop a exclusively original conceptual model explanation the aspects that affect buying behavior towards online in the context of coronavirus (COVID-19) pandemic situation in Bangladesh.

VII. LIMITATIONS AND DIRECTION FOR THE FURTHER STUDY

The research has been showed with an area is to examine the influential aspects of buying behavior towards online during the coronavirus (COVID-19) pandemic. Results demonstrated that three aspects, such as disease, payment and product had a significant relationship with buying behavior towards online during the coronavirus (COVID-19) pandemic. In contrast, other two aspects, such as price, and administrative had no relationship with buying behavior. However, every research has its limitations, and this study has no exception. First, the result is difficult to generalize because of the use of non-probability sampling method. A representative sample should be used. Second, the data may not be the actual representative of overall Bangladeshi consumers' judgment because of sample region. Third, the present research considers the buying behavior towards online during the coronavirus (COVID-19) pandemic the case of Bangladeshi consumers. The results may vary across several groups and others situation. Fourth, a small group of 221 consumers were considered having at least one time to buy through online of urban areas in Bangladesh. A larger sample size, including consumers residing in rural areas or other parts of the country, should be considered in an extended version of this study. Fourth, measurement scales used for the price aspect (0.695) showed lower Cronbach's alpha values, which are less than 0.7. Therefore, the items for these four aspects can be changed in future research for higher reliability. Regardless of these limitations, the present research has contributed toward existing literature by exploring the effect of influential aspects, such as disease, payment, price, administrative, and product on buying behavior toward online in the context of coronavirus (COVID-19) pandemic situation in Bangladesh.

REFERENCES

1. Accenture (2020). Coronavirus (COVID-19) Business Impact, Accenture, www.accenture.com (Accessed, 14 may, 2020).
2. Adebayo, Osanyinlusi, & Adekeye (2017). Impact of e-payment system on buying behaviour: evidence from retail outlets in Ilorin metropolis, Nigeria. *International Journal of Research in Arts and Social Sciences,* 9(2), 137-152.
3. Alam, J. (2020). Buying Behavior under Coronavirus Disease (COVID-19) Situation: A Online Perspective Case in Bangladeshi Shoppers. *Chinese Business Review,* 19(3), 82-90.
4. Andreti, J., Zhafira, N., Akmal, S., Kumar, S. (2013). The Analysis of Product, Price, Place, Promotion and Service Quality on Customers' Buying Decision of Convenience Store: A Survey of Young Adult in Bekasi, West Java, Indonesia. *International Journal of Advances in Management and Economics*, 2(6), 72-78.
5. Ariff, M. S.M. (2013). Web-based Factors Affecting Online Purchasing Behaviour. *IOP: Materials Science and Engineering,* 46 (2013). 012038doi:10.1088/1757-899X/46/1/012038
6. Atarere, O. L. & Osemwegie-Ero, O. J., (2014). Cashless banking and small and medium scale enterprises growth in Nigeria. *International Journal of Innovative Social Sciences & Humanities Research, 2(2), 98-105.*
7. Bhowmik, R. (2012). The Present E-Commerce Situation in Bangladesh for B2C E-Commerce, *International Journal of Economics and Research*, 3(5), 77-91.
8. Bhuiyan, M.S.A. (2020). Covid-19 and its impact on Bangladesh economy. The Business Standard. June 16, 2020. https://tbsnews.net/thoughts/covid-19-and-its-impact-bangladesh-economy-69541.
9. Business encyclopedia. Definition of electronic commerce. https:// www.encyclopedia,definitionofelectronic commerce.com.
10. Dummett, K. (2006). Drivers for corporate environmental responsibility. *Environment, Development and Sustainability,* 8, 375-389.
11. Eid, M. I. (2011). Determinants of e-commerce customer satisfaction, trust, and loyalty in Saudi Arabia. *Journal of Electronic Commerce Research,* 12, 78-93.

12. Elkington, J. (1997). *Cannibals with Forks.* The Triple Bottom Line of 21st Century Business (Capstone Publishing Ltd., Oxford, UK).

13. Goi, C. L. (2009). A review of marketing mix: 4Ps or more? *International Journal of Marketing Studies,* 1(1), 2-15.

14. Grais, R.F., Ellis, J.H., & Glass, G.E. (2003). Assessing the impact of airline travel on the geographic spread of pandemic influenza. *European Journal of Epidemiology, 18, 1065–1072.*

15. Hai, L. & Kazmi, S. (2015). Dynamic Support of Government in Online Shopping. *Asian Social Science, 11 (22).*

16. Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate data analysis: A global perspective.* Cengage Learning EMEA- United Kingdom.

17. Hajli, M.N. (2014). A Study on the Impact of Social Media on Consumers, International Journal of Market Research, 56(January), 387-404.

18. Heng, M.S., SH, M. (2003). Understanding electronic commerce from a historical perspective. Commun. Assoc. Inf. Syst. Vol. 12 2003 104, 118.

19. Hossain, A. & Khan, M.Y.H. (2018). Green Marketing Mix Effect on Consumers Buying Decisions in Bangladesh. *Marketing and Management of Innovations*, 8 (4), 298-306.

20. Hossain, A., Jamil, M.A., Rahman, M.M. (2018). Exploring the Key Factors Influencing Consumers' Intention, Satisfaction and Loyalty towards Online Purchase in Bangladesh. *International Journal of Economics and Financial Research*, 4 (7), 214-225.

21. Humphrey, D. B., Pulley, L. B., & Vesala, J. M. (1996). Cash, paper, and electronic payments: a cross-country analysis. *Journal of Money, Credit and Banking*, 28(4), 914-939.

22. IEDCR. Scenario of COVID-19 in Bangladesh. http: //www. scenario of covid-19 in bangladesh, iedcr.com

23. Islam, S.M.F. (2015). E-Commerce: Its Status and Impact on Business in Bangladesh. *Scholar Journal of Business and Social Science,* 1(1), 65-72.

24. Jain, A. (2013). Principles of Marketing. *New Delhi Rahul Jain-VK (India) enterprises.*

25. Kabango, C.M., A. R. A. (2011). Factors influencing ecommerce development: Implications. School of Management Science, Wuhan University of Technology, China, 1 (1), 64 – 72.

26. Khan, S.S. (2020). E-commerce in Bangladesh: Where are we headed? *The Financial Express.* https://thefinancialexpress.com.bd/views/e-commerce-in-bangladesh-where-are-we-headed-1578666791

27. Khiabani, B., (2006). B2B E-Commerce: attributes and adoption.

28. Kightcastle Analytics Wing. Bangladesh IT and Digital Sector Tackling COVID-19 Implications. https://www.lightcastbd.com/insights/2020/04/02/bangladesh-it-and-digital-sector-tackling-covid-19-implications

29. Kim, K., Hong, E., and Rho, S. (2013). The study of defined buying factors affecting trust building and service performance in financial management systems. *Mathematical and Computer Modelling*. 58 (2013) 38-48.

30. Kotler, P. & Armstrong, G. (2010). Principles of marketing. *Thirteenth Edition.*

31. Kotler, P., & Armstrong, G. (2012). Principles of Marketing (14th Ed). New Jersey: Prentice Hall.

32. Kuester, Sabine (2012): MKT 301: Strategic Marketing & Marketing in Specific Industry Contexts, University of Mannheim, p-110.

33. Kushwaha, G. S., & Agrawal, S. R. (2015). An Indian customer surrounding 7P'S of service marketing. *Journal of Retailing and Consumer Services*, 22, 85–95. https://doi.org/10.1016/j.jretconser.2014.10.006

34. Kusumawati, R., Oswari, T., Utomo, R., Vikas Kumar, V. (2014). The Influence of 7P's of Marketing Mix on Buying Intention of Music Product in Indonesia. *Global congress on manufacturing and management, Procedia Engineering 97 (2014) 1765 – 1771.*

35. Licker, A. M., P. S. (2005). E-commerce adoption in developing countries: a model and instrument. *Information and Management*, 42(6), 877-899.

36. Mahendratmo, B. P. J. and Ariyanti, M. (2019). Analysis of E-Marketing Mix to Consumer Purchase Decisions Traveloka. *Asian Journal of Management Sciences & Education*, Vol. 8(1).

37. Malasi J. M. (2012). Influence of Product Attributes on Mobile Phone preference among university students: A Case of Undergraduate students. *International Journal of Academic Research in Economics and Management Sciences. 1(6), 10 – 16.*

38. Malhotra, N. K. (2010). Marketing research: An applied orientation. New Jersey: Prentice-Hall.

39. Mashao, E. and Sukdeo, N. (2018). Factors that influence consumer behavior in the purchase of durable household products. *International Conference on Industrial Engineering and Operations Management, Paris, France, July 26-27, 2018.*

40. Mohiuddin, M. (2014). Overview the E-Commerce in Bangladesh. *IOSR Journal of Business and Management*, 16(7), 1-6.

41. Muhammad Mahmood (2020). COVID-19: Economic challenges facing Bangladesh. The Financial Express. https://thefinancialexpress.com.bd/views/covid-19-economic-challenges-facing-bangladesh-1592064588

42. Munusamy, J., & Hoo, W. (2008). Relationship between marketing mix strategy and consumer motive: an empirical study in major Tesco stores. *Unitar e-journal, vol. 4, no. 2.*

43. Muzondo, N., & Mutandwa, E. (2011). The seven P's of marketing and choice of main grocery store in a hyperinflationary economy. *Contemporary Marketing Review 1(9), 15.*

44. Nelson, R. R., & Soete, L. C. (1988). Policy conclusions. In D. G. Teoksessa, C. Freeman, R. Nelson, Silverberg, & L. Soete (Eds.), *Technical Change and Economic Theory. Pinter Publishers*. London.

45. Nelson, R. R., & Soete, L. C. (1988). Policy conclusions. In D. G. Teoksessa, C. Freeman, R. Nelson, Silverberg, & L. Soete (Eds.), *Technical Change and Economic Theory. Pinter Publishers. London*.

46. Nguyen, H.V., Tran, H. X. Huy, L. V., Nguyen, X. N., Do, M.T., and Nguyen, N. (2020). Online Book Shopping in Vietnam: The Impact of the COVID-19 Pandemic Situation, *Publishing Research Quarterly*. https://doi.org/10.1007/s12109-020-09732-2.

47. Oh, H. (2000). The effect of brand class, brand awareness, and price on customer value and behavioral intentions. *Journal of hospitality & tourism research, 24(2), 136-162.*

48. Pan, Y., & Zinkhan, G. M. (2006). Determinants of retail patronage: A meta-analytical perspective. *Journal of Retailing, 82(3), 229-243. http://dx.doi.org/10.1016/j.jretai.2005.11.008*.

49. Petrovic Dejan (2010) Analysis of consumer behavior online retrieved on Oct 22, 2013 from http://analogik.com/articles/227/analysis-of-consumer-behaviour.

50. Pongcharoensuk P, Adisasmito W, Sat LM et al. (2012). Avian and pandemic human influenza policy in South-East Asia: the interface between economic and public health imperatives. *Health Policy and Planning 27, 374–83.*

51. Princewell, N. A. And Anuforo, R. (2013). Shifting policy paradigm from cash-based to cashless economy: the Nigeria experience. *Africa Journal of Social Science, 12(4), 298-313.*

52. Rahman, M.A., Islam, M. A., Esha, B. H., Sultana, N., and Chakravorty, N. (2018). Consumer buying behavior towards online shopping: An empirical study on Dhaka city, Bangladesh, *Cogent Business & Management*, 5:1, 1514940.

53. Rajput, A.A., Kalhoro, S.H., & Wasif, R. (2012). Impact of Product Price and Quality on Consumer Buying Behavior: Evidence from Pakistan. *Interdisciplinary Journal of Contemporary Research in Business, 4(4), 485-493.*

54. Research & Market (2020). Impact of COVID 19 on the E-commerce Market, www.researchandmarkets.com. (Accessed 14 may 2020).

55. Ringle, C. M., Wende, S., and Becker, J.-M. (2015). "SmartPLS 3." Boenningstedt: SmartPLS GmbH, **Error! Hyperlink reference not valid.**.

56. Saeed, R., Lodhi, R.N., Rauf, A., Rana, M.I., Mahmoud, Z., and Ahmed, N., (2013). Impact of Labelling on Customer Buying Behavior in Sahiwal, Pakistan. *World Applied Sciences Journal 24 (9), 1250-1254.*

57. Satit, R.P, Tat, H.H, Rasli, A, Chin, T.A, Sukati, I. (2012). The Relationship between Marketing Mix and Customer Decision-Making over Travel Agents: An Empirical Study. *International Journal of Academic Research in Business and Social Sciences.*

58. Schiffman, L., Bednall, D., Cowley, E., O'Cass, A., Watson, J. and Kanuk, L., Consumer Behaviour (2nd edition). Australia: Prentice Hall, 2001.

59. Shaw, R., Kim, Y.k., and Hua, J. (2020). Governance, technology and citizen behavior in pandemic: Lessons from COVID-19 in East Asia, *Progress in Disaster Science*, 6(2020), 1-11. http://dx.doi.org/10.1016/j.pdisas.2020.100090.

60. Sinha, I., & Batra R. (1999). The Effect of Consumer Price Consciousness on Private Label Purchase. *International Journal of Research in Marketing 16(3), 237-251.*

61. Sinjanakhom, M.T. (2016). An empirical study of the factors influencing customers' purchase intention of digital camera. International college Silpakorn University. Pp 1-115.

62. Syfullah. M., (2020). Coronavirus bites into online Eid shopping, united News of Bangladesh, MAY 16, 2020, 08:39 AM.

63. Tian, Y., Stewart, C., (2007). History of E-Commerce. Electron. Commer. Concepts Methodol. Tools Appl. Inf. Sci. Ref.

64. Tjiptono, Fandy (2008). Strategi Pemasaran. Yogyakarta: Andi.

65. Wilder-Smith A. (2006). The severe acute respiratory syndrome: Impact on travel and tourism. *Travel Medicine and Infectious Disease 4, 53–60.*

66. World Health Organization (WHO). Situation of coronavirus (COVID-19) pandemic. http://www.coronavirus,world health oeganizaion.com.