

Expectations and the response: Evidence from the COVID-19 crisis in Saudi Arabia

Dr. Malik Elhaj

Assistant Professor,
PMU University, Saudi Arabia

Dr. Moid U Ahmad

Professor
University School of Business,
Chandigarh University,
Mohali, Punjab

Abstract:

Due to COVID-19 pandemic, the individuals and the industry have been affected and expect some support from the local government to negotiate the crisis. This paper attempts to identify the factors which have been significant in this crisis and analyzes the government's response to such factors. The research is based on a survey of respondents from the Kingdom of Saudi Arabia and uses the exploratory factor analysis apart from other techniques for analysis. One of the significant finding of the research is that the local respondents approve of the government's support and policies to handle this pandemic and that they expect the economy to focus on localization to negotiate this crisis.

Keywords: COVID-19 ;Factor analysis; Saudi Arabia; Economic impact

Introduction:

The COVID-19 has emerged as a serious threat to global health and economic stability. This has taken the governments by surprise considering the extent of the damage it has done and its long lasting nature. Being a novel pandemic, the governments across the globe were caught less prepared for such a calamity. This has affected the individuals and the industry together and both these entities expect some support from the local government to negotiate the social and economic effect of this pandemic.

The governments of various countries have announced various initiatives, schemes and economic relief packages to support the respective economies and its residents. Different governments across the globe are responding to this pandemic in different ways where the outcome would depend on the policy choices made during the crisis. The International Monetary Fund (IMF) hosts of a policy tracker which indicates the economic response for 193 countries. Additionally, the IMF has planned to support its member countries with a USD 250 billion lending facility. Every business requires a business continuity plan in the times of pandemic like COVID-19 and the policymakers need to consider this in the respective initiatives. It includes the preparation for

pandemics like COVID-19 and the planning to minimize recovery time and reduce the business losses.

In March (2020), COVID-19 was declared as global pandemic by World Health Organization (WHO) and almost all countries are facing its effect and aftershocks even in 2021. As a consequence, the social and mobility restrictions are attempted to control the disease. The business and trade across the globe suffered due to this pandemic and its effect continues even in 2021. The impact of shutdown has affected the whole world, Boshkoska&Jankulovski (2020). In 2020, the global FDI shrunk by 5%-15%. Tourism industry was perhaps the biggest casualty of this pandemic. The losses for Asia and Pacific region (-98%), Europe (-76%), Americas (-67%) was significant.

COVID-19 has forced a major increase in the role of the state to take tough decisions such as lockdown and travel curbs, which otherwise are difficult to implement, (Hepburn et al.,2020). Countries implemented various mobility and lockdown measure with an objective to contain this virus which resulted in a reduced economic activity. As the situation improved, various governments announced fiscal and economic support packages in the year 2020 to revive the respective economies.

The Middle East countries have been affected by two major shocks since 2020, the COVID-19 outbreak and a steep drop in oil prices. After the first COVID-19 case was deducted in early 2020, most of the governments in the Middle East were quick in implementing certain curbs such as suspending inbound commercial flights, closing schools and universities, banning public celebrations and gathering, suspending nonessential work in governmental entities, and eventually imposing a curfew. Reopening of the economy was implemented in multiple phases across the globe. Considering the economic support announcements amongst the Middle Eastern countries (as in December,2020), Saudi Arabia announced a \$19 billion support package, Kuwait announced a \$1.6 billion package while United Arab Emirates announced a \$9 billion package (source:www.imf.org). Some of the common government reforms in the Middle East included postponement of social security contributions, removing

government fees, and unemployment benefits, provide loans to SMEs, reduced interest rates, credit moratorium periods on loans, reduction in capital adequacy, statutory liquidity requirements, credit guarantees and suspension of monetary penalties.

Motivation for the research:

During COVID-19, the normal life has gone haywire. The individuals and the industry was affected economically and psychosocially, Gavin et al., (2020). The policy responses of governments to negotiate COVID-19 and its after effects on individuals and industry should be analyzed and studied for effective policymaking (Burton et al., 2020). There is a need for number of studies focused on social, economic and psychological aspects of this pandemic which will make the stakeholders better prepared and informed. Balajee et al.,(2020) focus on the fiscal situation of Indian economy and suggested that India should spend between 2.2% to 4.8% of its GDP in fighting the pandemic. Hepburn et al.(2020) compare COVID-19 pandemic to climate change problems and study fiscal stimulus packages in this context. It is imperative for all the stakeholders to understand the 'impact' of fiscal stimulus package and other government initiatives on the targeted segments of the economy. COVID-19 as a global pandemic has social and economic consequences for every country. The governments, policymakers and other stakeholders, across the globe, are interested in every perspective of this crisis and hence studies are being conducted focused on various aspects of this pandemic. Balajee et al.,(2020) analyzed the fiscal situation in India but did not measured the impact of the fiscal stimulus. There have been few articles published [Hafiz et al.,(2020); Burton et. al.,(2020);Chen et al.,(2020)] but hardly any comprehensive study is found which focuses on this theme. Although studies such as Alkhamees et al.(2020) focus on the psychological effect of COVID-19 on a Saudi Arabian sample, no studies were found specifically for Saudi Arabia which addresses the research gap by using exploratory factors analysis on individuals and industry related variables. Additionally, this research also studies the interrelationship between industry's expectations, the rationale for economic relief package and the government's response to it.

Literature Review:

Although the pandemic (COVID-19) is novel, the subject has been studied previously in the context of other pandemics. Some of the previous studies on the economic impact of medical outbreaks include Schoenbaum (1987) and Meltzer et al., (1999) with a focus on influenza pandemic. Some recent studies on COVID-19 include Burton et al.,(2020);Chen et al.,(2020a,2020b) and Ozili&Gopinath (2020).

Hafiz et al.,(2020) suggested three important policy implications in the context of COVID-19, providing social insurance, managing systemic, economic and financial risk and encouraging supportive behaviors to help contain the virus transmission. Ozili&Gopinath (2020) studied the variables, number of lockdown days, local mobility and international travel and found that they are significantly affected by this pandemic. Alkhamees et al.(2020) found that 23.6% respondents reported moderate or severe psychological impact of COVID-19 and that 28.3%,24%, and 22.3% reported moderate to severe depressive, anxiety, and stress symptoms, respectively. Alhajeri et al.,(2020) studied the impact of COVID-19 on Kuwait's economy and found a reduction in total power generation and losses in the oil sector. AlHumaidet al. (2020) found that people of Saudi Arabia are responding well to the threat of psychological trauma imposed by this disease and are following the instructions of their government and health regulatory body. Hafiz et al., (2020) focused on the United States and found that the country is trying to manage a fast-moving public health crisis due to the coronavirus outbreak while Burton et al.,(2020) found that the economic effects associated with the coronavirus epidemic are potentially significant. Chen et al.,(2020a) studied consumer spending while Barrot et al.,(2020) study the industry level shocks. McKibbin& Fernando (2020) study labour mortality and labour morbidity due to COVID-19 while Chen et al.,(2020b) study the direct and indirect cost of economic package interventions. Population health, as measured by life expectancy, infant and child mortality and the maternal mortality, is found positively related to economic welfare and growth by Bloom & Sachs(1998); Bhargava et al.,(2001) and by Bagadeem& Ahmad (2020). Loss of life

and time, mortality and morbidity, health expenses are various costs associated with pandemics. The fear of an unknown deadly virus is similar in its psychological effects to the reaction to biological and other terrorism threats and causes a high level of stress, often with longer-term consequences (Hyams et al.,2002). Viscusi& Hakes (1997) ranked pneumonia and influenza as the third leading cause of the probability of death (following cardiovascular disease and cancer).Liu et al.,(2005)found that the novelty, salience and public concern about pandemics result in an increased willingness to pay higher to prevent the risk of infection. Schoenbaum (1987) is an example of an early analysis of the economic impact of influenza. Meltzer et al., (1999) examine the likely economic effects of the influenza pandemic in the US and evaluate several vaccine-based interventions. Bloom et al., (2005) use the Oxford economic forecasting model to estimate the potential economic impact of a pandemic resulting from the mutation of avian influenza strain. They assume a mild pandemic with a 20% attack rate and a 0.5 percent case-fatality rate, and a consumption shock of 3%.The medical consequences of COVID-19 will be long termed (Hyams et al.,2002) and the customers may be willing to pay extra to avoid risk of infection(Liu et al., 2005) and that the operating costs of business increases during pandemics (Liu et al., 2005).

COVID-19 is the first global pandemic and a global economic crisis and thus past reference to the literature is not much available. Research on changes in mental health and stress of individuals during pandemics is scant. Tison et al.,(2020) studied the physical activity of respondents during this pandemic and found variance in this activity influenced by social distancing norms, regulatory curbs and socio-economic inequalities. Gavin et al.,(2020) focused on the mental illness of frontline workers and found it significant and that the governments are taking initiatives to improve the population's overall health. Hyams et al., (2002) also studied stress in the context of pandemics. Balajee et al.,(2020) studied the impact of economic support package in Indian context. There is hardly any reference found in the literature on the economic and social impact of government's initiatives for COVID-19. This study aims to address this research gap.

Research methodology:

The objective of the research is to derive relevant factors and thus study the impact of COVID-19 on individuals and industry. Additionally, the study aims to analyze the government's response to the expectations of individuals and the industry. A related questionnaire was prepared by the authors based on an analysis of existing literature and latest news items. Subsequently, a survey was conducted to collect data from managers and professionals during October, 2020-December,2020. The questionnaire was validated in discussion with two experts and a final survey instrument with 34 items was used for data collection. The respondents were asked to mark their responses (five point Likert's scale), varying from 'strongly disagree' to 'strongly agree'. About 174 usable responses were collected using a convenience sampling technique. The Cronbach's Alpha value measuring the reliability of the survey instrument was calculated as 0.71 (acceptable as per Cronbach, 1951). The anchor analysis is based on the exploratory factors analysis and the subsequent linear regressions. SPSS software (version 20.0) is used for calculations and analysis.

Data analysis and findings:

Initially the descriptive statistics was analyzed and it was observed that 74% of the respondents are aged 30 years or below, 60% respondents are male, 63% are graduates, 44% respondents are from the services sector while 25% work in the investing/banking sector, 62% work in the private sector and 24% respondents indicated themselves as unemployed. The sample descriptive is apt for such a study. Only 23% respondents are of the opinion that their earnings or their employer's earnings have increased during this pandemic while 41% respondents indicated a decrease in these earnings, implying a significant impact of COVID-19 on the earnings of individuals and industry. A good 70% respondents agreed that subsidies are needed in such times of crisis. About 40% were not sure and 35% disagreed that the effect of COVID-19 was more on female gender. About 57% respondents agreed that social fabric has improved during this pandemic. The respondents expect training and financial support from the government. A high 84% agreed that in such times of travel and mobility restrictions,

businesses should go online and that relevant training is needed to convert business into online mode. About 60% respondents agreed and expected a loan support from the government for businesses. About 86% agreed (40% strongly) that stress levels in individuals have increased during and due to COVID-19 pandemic.

It was also observed that 68% respondents agreed with the government support to financial institutions while 69% agreed that the decision to enable the return of expatriates has helped in containing the virus, 68% agreed that the decrease in oil prices had a negative effect on the economy and 63% agreed that the concessions given by the government in fees and taxes were supportive to the economy. About 62% respondents agreed and 30% were unsure that the economic relief package announced by the government was sufficient. About 66% respondents agree that privatization will help the local economy to grow post COVID-19. About 78% respondents agree that the unemployment fund created by the government was a required and a useful move. About 45% respondents were not sure (and 44% agreed) about the positive effect of reduction in interest rates. An important observation was that 80% respondents agreed (45% strongly) that 'localization' is a much needed and required step to boost employment in the local economy, post COVID-19. Analyzing the impact of social media in controlling this pandemic, it is observed that 72% respondents approved the use of health based online apps and that 69% agreed on the constructive contribution of social media for the purpose. Analyzing the coefficient of variations (CV) for the study variables, the highest CV (38%) was found for the question on the impact of COVID-19 on earnings while the lowest was found for the question on unlocking the economy (19%) and the need for training for online business (19%).

Subsequently, a Exploratory Factor Analysis (EFA) was conducted on the sample data with an expectation of reducing the data into relevant factor or components. This is a standard statistical technique used to study the latent factors that underlie on a larger number of measured variables or items. Usually a scree plot, Kaiser's (1960) Eigenvalue 'greater than 1' rule is used to identify number of factors from a data set. Exploratory Factor Analysis (EFA)

was conducted using Principal Component Analysis on the all the 28 items (non demographic variables) of data which resulted in 9 factors with eigenvalues above 1. The total explained variance was observed as 69%. Varimax rotation was selected as the latent construct (factors) are expected to be uncorrelated. Kaiser-Meyer-Olkin (KMO=0.65) and Bartlett's test statistics (p-value=0) are given in Table 1 and

these statistics were found to be satisfactory. The rotations converged in 36 iterations. The factor loading of above 0.5 was set as the default items selection procedure for components. Nine components were found and there were three components out of 9 which had only one variable each.

Table 1: EFA results (KMO and Bartlett's Test)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.655
Bartlett's Test of Sphericity	Approx. Chi-Square	1890.45
	Df	325
	p-value	0.0

MacCallum et al., (1999) advocate that to justify performing a factor analysis with small sample sizes, all items in a factor model should have communalities of over 0.60 or an average communality of 0.7. This rule by MacCallum et al., (1999) was applied in this analysis and EFA performed again. The KMO value reduced to 0.65, Bartlett's test remained significant and the number of factors remained nine with just two factor found consisting of one item each but with high factor loading. Total variance explained also increased to 72%. The last component (ninth) explained 5.9% after rotation. Thus, this PCA (Varimax rotation, 26 variables, and replace missing values with mean values) was considered as the final output of EFA

and the nine factors were identified and named as given in table 2. A satisfactory EFA would be where total variance explained (TVE) should be more than 60% and the variance explained by last component should be more than 5% (Hair et al., 2012). Thus, the variables to measure the social and economic impact of COVID-19 and the government's response to it, were reduced (summarized) into nine components (Table 2) and these are considered for subsequent regression analysis. It was observed that the components with a higher explained variance also indicated a higher reliability statistics. The factor 1 (government's support 1) indicated the highest explained variance (12.6%) and the highest reliability statistic (Cronbach's alpha =0.8).

Table 2: Factors identified

<i>Factors</i>	<i>Factor Name</i>	<i>Number of Items</i>	<i>Reliability</i>	<i>% of variance</i>
<i>Factor 1</i>	Government's economic support	5	0.8	12.59
<i>Factor 2</i>	Government's planning for containing COVID-19	3	0.7	10.99
<i>Factor 3</i>	Labour and Loan	4	0.72	9.49
<i>Factor 4</i>	Subsidies	1	NA	6.99
<i>Factor 5</i>	Oil prices and taxes	2	0.56	6.93
<i>Factor 6</i>	Government's planning for theeconomy 1	2	0.43	6.54
<i>Factor 7</i>	Government's planning for the economy 2	2	0.23	6.27
<i>Factor 8</i>	Miscellaneous 2	2	0.31	5.93
<i>Factor 9</i>	Stress	1	NA	5.93

The factors with a reliability score of less than 0.5 (as per Cronbach,1951) were not considered for further analysis. Thus, the factor 4 'Subsidies' with no reliability score, factor 6 'Government's planning for the economy 1' with a factor loading of 0.43, factor 7 'Government's planning for the

economy 1' with a factor loading of 0.23, factor 8 'Miscellaneous 2' with a factor loading of 0.31 and factor 9 'Stress' with no reliability score, were removed from further analysis. The residual factors are mentioned in table 3.

Table 3: Residual factors

Factors	Factor Name	Number of Items	Reliability	% of variance
Factor 1	Government's economic support	5	0.8	12.59
Factor 2	Government's planning for containing COVID-19	3	0.7	10.97
Factor 3	Labour and Loan	4	0.72	9.45
Factor 5	Oil prices,fees & taxes	2	0.56	6.31

The researcher also analyzed the impact of Government's economic support (Factor 1), Labour and Loan (Factor 3) and oil prices, fees & taxes (Factor 5) on the Government's planning for containing COVID-19 (Factor 2) and the results are highlighted in table 4. It is observed that the government's planning was significantly affected by Factor

1 and Factor 3, respectively(bivariate regression), and together with Factor 1, Factor 3and Factor 5 (multivariate regression, R-squared=18.5%). The Factor 5 was found to have a negative effect on the government's response and policies.

Table 4: Regression amongst the residual factors

Dependent variable: Factor 2			
	R-squared (%)	p-value	coefficient
Factor 1	0.6	0.3	0.085
Factor 3	17	0	0.53
Factor 5	0.2	0.57	-0.04
Dependent variable: Factor 2			
Factor 1	18.5	0	0.01
Factor 3			0.55
Factor 5			-0.12

The industry approval of government support to the industry was measured as an average score of seven variables on unemployment support, subsidies, taxes, economy relief package, interest rates and the support to financial institutions. The lowest score was observed as 2.14 indicating a general approval of the government's policies to support the industry and the economy of Saudi Arabia. The total of average responses between score 4 to 5 (agree to strongly agree) was about 36% indicating a strong

sentiment from the industry in the favor of government's policies and response to negotiate the economic impact of COVID-19.

Subsequently, an analysis for industry expectations and the government's response to it was conducted for two specific variables, support for subsidies and for the support in loans/finances. Initially, a correlation analysis was done to understand the statistical association between industry expectation and the government's response to it. A

statistically significant correlation value of 0.272 was found on the issue of subsidies and a statistically significant correlation value of 0.194 was found on the issue of loans and finances. This indicates that although not high, but the expectations and responses are moving in the same direction. A crosstab analysis revealed a maximum response of 13% for respondents who strongly expected subsidy support and were contented by the government's response (4.33 score) to such expectation. A crosstab analysis for the loan support expectation revealed that 25% respondents agreed to such support and indicated a satisfaction for the government's response to such expectation with a score between 4 to 5.

Some specific survey questions related to the Saudi economy and the responses in the context of COVID-19 are indicated in table 5. Most of the respondents (high mean=4.07 and low CV=28%) indicated that Saudization and Privatization (high mean=3.84 and low CV=22%) of the local economy may boost it post COVID-19. All other variables were found to have mean values of more than 3 indicating that, in general, the respondents approved the government's move on these specific issues.

Table 5: Descriptive of specific variables

	Mean	CV
Privatization	3.84	0.22
Saudization	4.07	0.28
Increase in VAT	3.01	0.40
Increase in customs duties	3.39	0.32
Efficiency of 'My Health' App	3.90	0.25
Decrease in Oil prices	3.83	0.28

Discussion:

The sample was found suitable for analysis with a mix of gender, industrial sector and nature of employment for the respondents. A large number of respondents (41%) reported that their earnings have decreased and a majority (60%) did migrated back to their hometown indicating a severe economic impact of COVID-19 for Saudi Arabia signaling future labour problems in the form of labour shortage and reduced pay scales.

About 68% agreed and appreciated the government's support for financial institutions, unemployment fund concessions in fees and taxes and the economic support package. About 66% respondents agreed that privatization will help the local economy to grow post COVID-19. The respondents were very much appreciative of the unlock plan of the government and most of them accept the fact that in such pandemic scenarios it is imperative to explore the online business models and that training for the purpose is required.

The industry's approval of government support to the industry was observed as acceptable and as the local government lived up to the expectations. An average value of 2.14 indicated a general approval of the government's policies to support the industry and the economy of Saudi Arabia. About 36% of total responses were observed between the scores of 4 to 5 (agree to strongly agree) indicating a strong sentiment from the industry in the favor of government's policies and response to negotiate the economic impact of COVID-19. Additionally, a statistically significant correlation value of 0.272 and a statistically significant correlation value of 0.194 between the issue of subsidies and on the issue of loans and finances was observed, respectively, with the government's response in meeting the expectations indicated a low but positive match between industry expectations and the government's response. This was additionally validated by a crosstab analysis.

Analyzing some specific survey questions (Table 5) related to the Saudi Arabian economy, most of the respondents supported 'Saudization' and 'Privatization' of the local economy to support the economy post COVID-19. All other relevant variables were found to have high mean values indicating that, in general, the respondents approved the government's move on these country specific issues.

The EFA analysis resulted in four significant factors, Government's economic support (Factor 1), the Government's planning for containing COVID-19 (Factor 2), labour and loan (Factor 3) and oil prices, fees & taxes (Factor 5). It is observed that the government's planning was significantly affected by its economic support and loan issues, respectively while together with oil/taxes/fees explained 18.5% variance in planning.

Conclusion:

The paper is aimed to understand the impact of COVID-19 on individuals and the industry and the respective government's response to negotiate this impact. The focus is on the Kingdom of Saudi Arabia as a country. It was explicitly observed that the government's support, schemes and planning was effective in managing COVID-19 and that 'Privatized Localization' emerged as a possible means to revive the economy, post COVID-19 in Saudi Arabia. All other local variables indicated that the respondents approved the government's move on selected country specific issues. The industry's approval of government support to the industry was also observed as acceptable and the local government lived up to the expectations. This approval was specifically tested and found positive on the issue of subsidies and loan support.

In a regression analysis based on the extracted factors it is observed that the government's planning was significantly affected by of Government's economic support and the Labour and Loan issues, respectively, and together with oil prices, fees & taxes.

Managerial implications: The government and policymakers should focus on the industrial sectors which are more effected by COVID-19 and in which the employees are more stressed. The expectation of the individuals and industry should be considered in formulation of policies. They should also work on a framework for 'Privatized Localization'. Although the study was based on a KSA sample, the findings are relevant to other economies also.

Limitation of the study: The sample used is based on non-representative convenience methodology. A geographically wider and larger sample of respondents should be used for a more robust study. The time period of data collection could have been longer but it was constraint by the continuing pandemic. Being a novel pandemic, data and literature availability was also a constraint for the study.

References:

- Alhajeri, H. M., Almutairi, A., Alenezi, A., & Alshammari, F. (2020). Energy demand in the state of Kuwait during the COVID-19 pandemic: technical, economic, and environmental perspectives. *Energies*, 13(17): 4370.
- AlHumaid, J., Ali, S., & Farooq, I. (2020), The psychological effects of the COVID-19 pandemic and coping with them in Saudi Arabia, *Psychological Trauma: Theory, Research, Practice, and Policy*, 12(5): 505–507
- Alkhamees, A. A.; Alrashed, S. A.; Alzunaydi, A. A.; Almohimeed, A. S. & Aljohani, M. S. (2020), The psychological impact of COVID-19 pandemic on the general population of Saudi Arabia, *Comprehensive Psychiatry*, 102:1-9
- Bagadeem, S. A. & Ahmad, M. U. (2020). Healthcare Expenditure and Economic Growth: How Important Is the Partnership?, *Research in World Economy*, 11(5):297-307
- Balajee, A.; Tomar, S. & Udupa, G. (2020). Fiscal Situation of India in the Time of COVID-19. Indian School of Business. Available at SSRN: <https://ssrn.com/abstract=3571103>
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51: 1173-1182.
- Bhargava, A., Jamison, D. T., Lau, L & Murray, C. (2001). Modeling the effects of health on economic growth, *Journal of Health Economics*, 20(3): 423-40.
- Bloom, D. E. and J. D. Sachs, 1998. Geography, Demography, and Economic Growth in Africa. *Brookings Papers on Economic Activity* 0(2), 207-73
- Bloom, E., De Wit, V. & Mary Jane, C. S. (2005). Potential economic impact of an Avian Flu pandemic on Asia. ERD Policy Brief Series No. 42. Asian Development Bank, Manila. http://www.adb.org/Documents/EDRC/Policy_Briefs/PB042.pdf
- Boshkoska, M., & Jankulovski, N. (2020). Coronavirus impact on global economy. *Annals of Constantin Brancusi*, University of Targu-Jiu. Economy Series, 4 (2020):18-24

- Burton, D.; Michel, N.; Sheppard, P. & Winfree, P.(2020). Sound Policy Responses to the Economic Consequences of the Coronavirus. Available at www.heritage.org/sites/default/files/2020-03/IB5046.pdf(accessed on June 9,2020)
- Chen, H.; Qian, W. & Wen, Q. (2020a). The Impact of the COVID-19 Pandemic on Consumption: Learning from High Frequency Transaction Data. Available at SSRN: <https://ssrn.com/abstract=3568574> or <http://dx.doi.org/10.2139/ssrn.3568574>
- Chen, Q.; Zhiguo He; Chang-Tai Hsieh & Zheng (Michael) Song (2020b). Economic Effect of Lockdown in China. Chinese University of Hong Kong-Tsinghua University Joint Research Center for Chinese Economy, COVID-19 Thematic Report No. 2.
- Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16: 297-334
- Gavin, B., Lyne, J., & McNicholas, F. (2020). Mental health and the COVID-19 pandemic. *Irish journal of psychological medicine*, 37(3): 156-158
- Hafiz, H.; Oei, S.Y.; Ring, D.M. & Shnitser, N.(2020).Regulating in Pandemic: Evaluating Economic and Financial Policy Responses to the Coronavirus Crisis. Boston College Law School Legal Studies Research Paper (527).
- Hair, J.F., Sarstedt, M., Pieper, T.M. , & Ringle, C.M. (2012) The Use of Partial Least Squares Structural Equation Modeling in Strategic Management Research: A Review of Past Practices and Recommendations for Future Applications, *Long Range Planning*, 45(5–6): 320-340
- Hepburn, C.; O'Callaghan, B.; Stern, N.; Stiglitz, J.; & Zenghelis, D.(2020). Will COVID-19 fiscal recovery packages accelerate or retard progress on climate change? *Smith School Working Paper 20-02*.
- Horn, J. L. (1965). A rationale and test for the number of factors in factor analysis, *Psychometrika*, 30:179–185.
- <https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19> (accessed on July 7,2021)
- Hyams, K. C., Murphy, F.M., & Wessely, S.(2002). Responding to Chemical, Biological, or Nuclear Terrorism: The Indirect and Long-Term Health Effects May Present the Greatest Challenge. *Journal of Health Politics, Policy and Law*, 27(2), 273-91
- Kaiser, H. F. (1960). The application of electronic computers to factor analysis, *Educational and Psychological Measurement*, 20:141–151.
- Lai Mooi Tho (1994) Some evidence on the determinants of student performance in the University of Malaya introductory accounting course, *Accounting Education*, 3(4): 331-340
- MacCallum, R. C., Widaman, K. F., Zhang, S., & Hong, S. (1999). Sample Size in Factor Analysis. *Psychological Methods*, 4: 84-99.
- McKibbin, W. J. & Fernando, R. (2020), The global macroeconomic impacts of COVID-19: Seven scenarios'. available at www.brookings.edu/wp-content/uploads/2020/03/20200302_COVID19.pdf (accessed on June 9,2020)
- Meltzer, M. I. & Cox, N.J. (1999). The economic impact of pandemic influenza in the United States: priorities for intervention. *Emerging Infectious Diseases*, 5(5): 659-71.
- Ozili, P. K., & Arun, T. (2020). Spillover of COVID-19: impact on the Global Economy. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3562570
- Schoenbaum, S. C. (1987). Economic impact of influenza. The individual's perspective. *American Journal of Medicine*, 82(6A):26-30.
- Shereen, M. A., Khan, S., Kazmi, A., Bashir, N., & Siddique, R. (2020). COVID-19 infection: Origin, transmission, and characteristics of human coronaviruses. *Journal of advanced research*, 24: 91-98
- SHT, K. (2020). Impact of COVID-19 on Tourism Industry: A Review. <https://mpra.ub.uni-muenchen.de/id/eprint/102834>

- Shubhi, A. & Singh, A. (2020). COVID 19 and its impact on Indian economy. *International Journal of Trade and Commerce*,9:72-79
- Sulistiyani, &Riyanto, S.(2020). The impact of the COVID-19 pandemic on the manufacturing industry,4:2454-6186. Available on www.researchgate.net
- Tison, G. H., Avram, R., Kuhar, P., Abreau, S., Marcus, G. M., Pletcher, M. J., &Olgin, J. E. (2020). Worldwide effect of COVID-19 on physical activity: a descriptive study. *Annals of internal medicine*, 173(9): 767-770
- Viscusi, W. K. & Hakes, J.K. (1997).Measures of Mortality Risks. *Journal of Risk and Uncertainty*. 14(3):213-33.
- www.airlines.iata.org/news/potential-for-revenue-losses-of-113bn-due-to-COVID-19-%E2%80%99crisis%E2%80%9D
- www.onlinelibrary.wiley.com/doi/abs/10.1002/jmv.25827(accessed on June 9,2020)
- www.statista.com/statistics/1107572/COVID-19-value-g20-stimulus-packages-share-gdp/ (accessed on September 14,2020)
- www.who.int/docs/default-source/coronavirus/situation-reports/20200325-sitrep-65-COVID-19.pdf?sfvrsn=ce1306162 (accessed on September 14,2020)
-