Special Issue

a flagship journal with a focus on emerging issues

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Impact of Coronavirus (COVID-19) on the Global Socio-economy

HUMANITIES AND SOCIAL SCIENCES RESEARCH

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Special Issue Editor: **Nayan Kanwal**, FRSA, ABIM, AMIS, Ph.D.

Journal of Humanities and Social Sciences Research
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About the Journal

Overview

Horizon Journal of Humanities and Social Sciences Research (JHSSR) is an open-access journal published by BP Services, independently owned, dependent upon donations and run on a non-profit basis for the benefit of the world-wide social science community. It neither accepts nor commissions third party content. It is an open-access online scientific journal which is free of charge. It publishes the scientific outputs.

Recognized internationally as a leading peer-reviewed interdisciplinary journal devoted to the publication of original papers, it serves as a forum for practical approaches to improving quality in issues pertaining to social and behavioural sciences as well as the humanities.

JHSSR is currently a **bi-annual** (*July* and *December*) periodical that considers for publication original articles as per its scope. The journal publishes in **English** and it is open to authors around the world regardless of the nationality.

The Journal is available world-wide.

Aim and scope

Horizon Journal of Humanities and Social Sciences Research aims to develop as a pioneer journal for the social sciences with a focus on emerging issues pertaining to the social and behavioural sciences as well as the humanities.

JHSSR is a principal outlet for scholarly articles. The journal provides a unique forum for theoretical debates and empirical analyses that move away from narrow disciplinary focus. It is committed to comparative research and articles that speak to cases beyond the traditional concerns of area and single-country studies. JHSSR strongly encourages transdisciplinary analysis of contemporary and historical social change particularly in Asia, or beyond by offering a meeting space for international scholars across the social sciences, including anthropology, cultural studies, economics, geography, history, political science, psychology, and sociology.

Scope of the journal includes HUMANITIES– Field of Languages, Linguistics, Literature, Translation, modern Languages, Education, Philosophy, Humanistic Theories and Practices. SOCIAL SCIENCES– Archaeology, Anthropology, Economics, Geography, History, Law, psychology Political Sciences, sociology, dance, music, sport, Graphic Design, Technology Management, public policy, Arts and Cultures, and Accounting.

History and Background

A premier journal in its field, JHSSR was established in 2019, and has been in circulation since then. Horizon is an open access scholarly journal that currently publishes *semi-annually*. The journal uses a stringent double-blind peer-review process and follows code of conduct stipulated by the Committee on Publication Ethics (COPE).

It primarily publishes for dissemination of academic research meant for scholars and scientists worldwide. It publishes on non-profitable basis and does not have any income from subscription or other sources. The journal does not impose any publication or page fee on authors intending to publish in Horizon journals. It aims to achieve its SCOPUS status within 2 years of publication.

JHSSR is distributed worldwide to more than 1000 institutions via *e-alerts*, in addition to authors upon request. To provide expert evaluation of the various segments of the broad spectrum of Humanities and Social Sciences research, the editorial office is assisted by scholars who serve as Associate Editors, editorial board members, Emeritus editors and international advisory board members, and ad hoc reviewers chosen for their expertise. They provide constructive evaluation and fair and rapid editorial processing. The frequency of citations to articles published in JHSSR by scientists, students, and others increases each year.

To facilitate review, the Editor-in-Chief and the Chief Executive Editor previews all submitted manuscripts and independently or in consultation with an Associate Editor, decides if a manuscript is appropriate for review by members of JHSSR's editorial board and/or ad hoc reviewers. Manuscripts outside of the scope of JHSSR or those articles in poor English are returned without the delay of a full review, generally within a week of submission.

Authors may contact the Chief Executive Editor in advance to inquire about the potential suitability of their research topic for review.

Manuscript submissions and inquiries are encouraged. Manuscript style and formatting are described in the "**Instructions to Authors**". Manuscript submissions should be made using JHSSR online manuscript submission

system, or manuscripts should be mailed through email to the Chief Executive Editor. Direct inquiries to CEE.horizon@gmail.com

Goal

Our goal is to bring the highest quality research to the widest possible audience. Our objective is "**Today's research, tomorrow's impact**".

Quality

We aim for excellence, sustained by a responsible and professional approach to journal publishing. Submissions are guaranteed to receive a decision within 14 weeks. The elapsed time from submission to publication for the articles averages 3-4 months.

Editorial and International Advisory Board

The editorial and the advisory board of the Horizon has a presence of an international base of renowned scholars from various disciplines of research with diverse geographical background.

Our editorial team is engaged with **universities in 35 countries across the world** including **Australia, Bangladesh, Canada, Fiji, Finland, Germany, India, Iran, Jordon, Lithuania, Malaysia, Morocco, Nepal, Netherlands, New Zealand, Nigeria, Pakistan, Philippines, Portugal, Saudi Arabia, South Africa, Sweden, Taiwan, Thailand, Turkey, United Kingdom, USA,** and **Vietnam**.

Abstracting and indexing of *Horizon*

As is the case with any new journal, indexing in all prestigious relevant databases takes some time.

The Horizon Journal of Humanities and Social Sciences Research (Online ISSN 2682-9096) is a *high-quality, peer-reviewed* academic journal in its field.

Horizon JHSSR is a Gold Open Access journal and indexed in major academic databases to maximize article discoverability and citation. The journal follows best practices on publication ethics outlined in the COPE Code of Conduct. Editors work to ensure timely decisions after initial submission, as well as prompt publication online if a manuscript is accepted for publication.

Upon publication, articles are immediately and freely available to the public. The final version of articles can immediately be posted to an institutional repository or to the author's own website as long as the article includes a link back to the original article posted on JHSSR. All published articles are licensed under a Creative Commons Attribution 4.0 International License.

The journal has been indexed and abstracted in: CrossRef, Directory of Open Access Journals (DOAJ), Excellence for Research in Australia (ERA), Google Scholar, EBSCOhost, ProQuest, The journal has been listed in: CiteFactor, Cornel University Library, CrossCheck, DRJI, Journalseek, openaccessarticles.com, Open Access Library, Rubrig, Scirus, Ulrichs. In addition, the journal has been archived in: Academia.edu, National Library of Malaysia.

The journal editors and the publisher are doing their best for this journal to be included in the top abstracting and indexing databases; however, for the journal to be indexed in any indexing body is beyond the Journal's direct control. Nevertheless, the journal ensures that the papers published are of high quality. The publisher from time to time recommends the journal to the indexing and abstracting bodies.

The authors must also ensure that the manuscripts they submit to Horizon are of top quality and are innovative.

Citing journal articles

The abbreviation for *Horizon* Journal of Humanities and Social Sciences Research is *Horizon J. Hum. Soc. Sci. Res.*

Publication policy

Horizon publishes original work and its policy prohibits an author from submitting the same manuscript for concurrent consideration by two or more publications, and is not under concurrent consideration elsewhere at the time of submitting it to Horizon. It prohibits as well publication of any manuscript that has already been published either in whole or substantial part elsewhere in any language. It also does not permit publication of manuscript that has been published **in full** in Proceedings.

Originality

The author must ensure that when a manuscript is submitted to Horizon, the manuscript is an original work. The author should check the manuscript for any possible plagiarism using any software such as **TurnItIn**, **i-Thenticate** or any other similar program before submitting the manuscripts to the Horizon journal.

All submitted manuscripts must be in the Journal's acceptable **similarity index range**:

< 30%– PASS; **30-40%–** RESUBMIT MS; **> 40%**– REJECT.

Publication Ethics and Publication Malpractice Statement

Code of Conduct

The Horizon Journals takes seriously the responsibility of all of its journal publications to reflect the highest in publication ethics. Thus all journals and journal editors abide by the Journal's codes of ethics. Refer to Horizon's **Code of Conduct** for full details at the Journal's web link https://horizon-jhssr.com/code-of-conduct.php

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In case of any queries, contact the Journal's Editorial office via email to info@horizon-jhssr.com

Article Processing Charges (APC)— Open Access Journal

Open access publishing proposes a relatively new model for scholarly journal publishing that provides immediate, worldwide, barrier-free access to the full-text of all published articles. Open access allows all interested readers to view, download, print, and redistribute any article without a subscription, enabling far greater distribution of an author's work than the traditional subscription-based publishing model. Many authors in a variety of fields have begun to realize the benefits that open access publishing can provide in terms of increasing the impact of their work world-wide.

Horizon **does not impose** any submission fees, publication fees or page charges for those intending to publish their research in this journal. However, as Horizon is an open access journal, in norms with all open access journals, the journal has imposed an Article Processing Charge (APC). To publish in Horizon, authors are required to pay an APC of USD250 per article. A waiver to this available for academics with a heavily subsidized fee of USD100 per accepted manuscript.

In addition, this journal offers discount on Article Processing Charges to authors based in any of the countries which were classified by the World Bank as Low-income economies or Lower-middle-income economies. All requests can be sent directly to the journal's Chief Executive Editor.

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work, which is released under a "Creative Commons Attribution License," enabling the unrestricted use, distribution, and reproduction of an article in any medium, provided that the original work is properly cited.

International Standard Serial Number (ISSN)

An ISSN is an 8-digit code used to identify periodicals such as journals of all kinds and on all media–*print and electronic*. All Horizon journals have an e-ISSN.

Horizon Journal of Humanities and Social Sciences Research: **e-ISSN 2682-9096**.

Lag time

A decision on acceptance or rejection of a manuscript is reached in 3 to 4 months (average 14 weeks). The elapsed time from submission to publication for the articles averages 4-5 months.

Authorship

Authors are not permitted to add or remove any names from the authorship provided at the time of initial submission without the consent of the Journal's Chief Executive Editor. Requests for changes to authorship must be directed to the journal's chief executive editor. Changes in authorship will only be permitted where valid reasons are provided and all authors are in agreement with the change. Post-publication changes to authorship will typically be made via a published correction and authors may be charged for this additional service.

One author will need to be identified as the corresponding author, with their email address normally displayed in the article. Authors' affiliations are the affiliations where the research was conducted. If any of the named co-authors moves affiliation during the peer-review process, the new affiliation can be given as a footnote. Please note that no changes to affiliation can be made after your paper is accepted.

Manuscript preparation

Refer to Horizon's **INSTRUCTIONS TO AUTHORS** at the back of this journal or visit
https://horizon-jhssr.com/manuscript-prepparation.php

A well-formatted manuscript follows all journal instruction. All elements of the manuscript are printed in English with 1-inch margins at top, bottom, and sides. Right margins are unjustified. Horizon journals accept manuscript submissions which uses any consistent text— Format-free Submission! This saves you time and ensures you can focus on your priority: the research.

However, citations/references must be formatted by you as per APA format.

Checklist for Manuscript Submission

- Cover letter
- Declaration form
- Referral form
- Manuscript structure

(Title, Author details and affiliation, Abstract, Keywords, etc. using the **IMRAD** style).

Each submission must fulfil the following criteria and documents listed below must be submitted along with the manuscript for intended publication.

1) Cover letter

Your cover letter should be complete and make a strong pitch. The cover letter should include all these details:

- Author(s): Full contact details (email, institutional address, telephone number, etc.) of all authors listed including who the corresponding author will be [full name(s) written as First Name then Last Name]. Understand the differences between lead author and co-author(s). Lead-author: who has done most of the research and writing; Co-author: Has collaborated with the lead author and contributed some parts.
- A brief explanation of your article's relevance and impact.
- Disclosure of whether you have published this study previously elsewhere or if it is in consideration by another journal.
- Disclosure of any commercial or financial relationship that may be viewed as any potential conflict of interest.
- A brief statement explaining why the journal should publish your study. (Refer to sample available at https://horizon-jhssr.com/download.php).

2) Declaration form

Do not forget to complete the declaration form and submit it along with your manuscript. Sign the declaration that your manuscript is original, you have NOT published this study previously elsewhere in any language and is not under concurrent consideration elsewhere at the time of submitting it to Horizon.

3) Referral form

The authors are strongly recommended to complete the "Reviewers Suggestion" form along with the manuscript during submission. Authors should suggest up to 3 names of potential reviewers experts in the subject area of the manuscript, and are not the co-authors listed in the manuscript submitted. The suggested reviewers may be from any part of the world. The journal is not, however, bound by these suggestions.

4) Language and flow

A well-written manuscript has greater chances of acceptance. Some tips:

- Avoid long, complicated sentences; keep it simple. Your sentences should be understandable.
- Your ideas should flow smoothly.
- Use correct terminology, avoid excessive jargon and grandiose language.
- Make sure there are no grammatical mistakes.
- It is highly recommended to approach an editing service for help with polishing your manuscript. The journal has a long-term proven affiliation with a good certified editor at Beyond Proofreading Services PLC.

You may contact Dr. Brown at Beyond Proofreading PLC, beyondproofreading@gmail.com at your own discretion.

Language Accuracy

Horizon **emphasizes** on the linguistic accuracy of every manuscript published. Articles must be in **English** and they must be competently written and argued in clear and concise grammatical English. Contributors are strongly advised to have the manuscript checked by a colleague with ample experience in writing English manuscripts or a competent English language editor.

Author(s) **should provide a certificate** confirming that their manuscripts have been adequately edited. A proof from a certified editing service should be submitted together with the cover letter at the time of submitting a manuscript to Horizon**.**

All editing costs must be borne by the author(s). This step, taken by authors before submission, will greatly facilitate reviewing, and thus publication if the content is acceptable.

Refer to Horizon's **MANUSCRIPT FORMAT GUIDE** at https://horizon-jhssr.com/online-submission.php

Editorial process

Authors are notified with an acknowledgement containing a *Manuscript ID* upon receipt of a manuscript, and upon the editorial decision regarding publication.

Horizon follows a **double-blind peer-review** process. Authors are encouraged to suggest names of at least three potential reviewers at the time of submission of their manuscript to Horizon using the **Referral form**. The editors are not, however, bound by these suggestions.

The Journal's peer-review

In the peer-review process, three referees independently evaluate the scientific quality of the submitted manuscripts.

Peer reviewers are experts chosen by journal editors to provide written assessment of the **strengths** and **weaknesses** of written research, with the aim of improving the reporting of research and identifying the most appropriate and highest quality material for the journal.

The Review process

What happens to a manuscript once it is submitted to *Horizon*? Typically, there are seven steps to the editorial review process:

1. The Journal's chief executive editor and the editorial board examine the paper to determine whether it is appropriate for the journal and should be reviewed. If not appropriate, the manuscript is rejected outright and the author is informed. Linguistically hopeless manuscripts will be rejected straightaway (e.g., when the language is so poor that one cannot be sure of what the authors really mean).

2. The chief executive editor sends the article-identifying information having been removed, to three reviewers. Typically, one of these is from the Journal's editorial board. Others are external specialists in the subject matter represented by the article. The chief executive editor requests them to complete the review in three weeks.

   Comments to authors are about the appropriateness and adequacy of the theoretical or conceptual framework, literature review, method, results and discussion, and conclusions. Reviewers often include suggestions for strengthening of the manuscript. Comments to the editor are in the nature of the significance of the work and its potential contribution to the literature.

3. The chief executive editor, in consultation with the Editor-in-Chief, examines the reviews and decides whether to reject the manuscript, invite the author(s) to revise and resubmit the manuscript, or seek additional reviews. Final acceptance or rejection rests with the Editor-in-Chief, who reserves the right to refuse any material for publication. In rare instances, the manuscript is accepted with almost no revision. Almost without exception, reviewers' comments (to the author) are forwarded to the author. If a revision is indicated, the editor provides guidelines for attending to the reviewers' suggestions and perhaps additional advice about revising the manuscript.

4. The authors decide whether and how to address the reviewers' comments and criticisms and the editor's concerns. The authors return a revised version of the paper to the chief executive editor along with specific information describing how they have answered' the concerns of the reviewers and the editor, usually in a tabular form. The author(s) may also submit a rebuttal if there is a need especially when the author disagrees with certain comments provided by reviewer(s).

5. The chief executive editor sends the revised paper out for re-review. Typically, at least one of the original reviewers will be asked to examine the article.

6. When the reviewers have completed their work, the chief executive editor in consultation with the editorial board and the Editor-in-Chief examine their comments and decide whether the paper is ready to be published, needs another round of revisions, or should be rejected.

7. If the decision is to accept, an acceptance letter is sent to all the author(s), the paper is sent to the Press. The article should appear in print in approximately three months.

The Publisher ensures that the paper adheres to the correct style (in-text citations, the reference list, and tables are typical areas of concern, clarity, and grammar). The authors are asked to respond to any minor queries by the Publisher. Following these corrections, page proofs are mailed to the corresponding authors for their final approval. At this point, **only essential changes are accepted**. Finally, the article appears in the pages of the Journal and is posted on-line.

SUBMISSION OF MANUSCRIPTS

Owing to the volume of manuscripts we receive, we must insist that all submissions be made electronically using the **online submission system™**, a web-based portal. For more information, go to our web page and click "**Online Submission**".

Please do **not** submit manuscripts to the Editor-in-Chief or to any other office directly. All submissions or queries must be directed to the **Chief Executive Editor** via email to CEE.horizon@gmail.com

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J H S S R

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A Special Issue on
The Impact of Coronavirus (COVID-19)
on the Global Socio-economy

Editor: **Nayan Kanwal,** FRSA, ABIM, AMIS, Ph.D

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ABSTRACTING/INDEXING
As is the case with any new journal, indexing in all prestigious relevant databases takes some time. Horizon inspires to be a member of: Committee on Publication Ethics (COPE).

The journal has been indexed and abstracted in EBSCO, DOAJ, Google Scholar, ISC, Rubriq, National Library of Malaysia and MyAIS.

Journal of Humanities and Social Sciences Research
Vol. 2 (S) Jun. 2020

Contents

FOREWORD

Welcome to this special issue of Horizon Journal of Humanities and Social Sciences Research (JHSSR) titled, "**Impact on Coronavirus Disease (COVID-19) on Global Economy**".

JHSSR is an academic, interdisciplinary, and peer-reviewed open-access publication, published rapidly by BP Services. The journal is independently owned, dependent upon donations and run on ***not-for-profit*** basis for the benefit of the world-wide social science community.

The coronavirus outbreak is first and foremost a human tragedy, affecting hundreds of thousands of people. It is also having a growing impact on the global economy. This special issue is intended to provide business and industry leaders with a perspective on the evolving situation and implications for their companies. The outbreak is moving quickly, and some of the perspectives in the articles in this issue may fall rapidly out of date. The article published in this special issue reflect our perspective as of June 30, 2020.

This special issue features special essays from research and authors in Brunei, Germany, India, Indonesia, Malaysia, South Africa, Taiwan, Thailand, and USA in the field who explore future directions of the pandemic and its impact on world economy and higher education.

The coronavirus outbreak, which originated in China, has infected more than 7,939,988 people and 433,904 deaths *(as of 14 June 2020)* worldwide. Its spread has left businesses around the world counting costs.

The coronavirus is not only a health crisis of immense proportion—it's also an imminent restructuring of the global economic order.

The world economy will go into recession this year with a predicted loss of trillions of dollars of global income due to the coronavirus pandemic, spelling serious trouble for developing countries with the likely exception of India and China, according to a UN trade report.

Big shifts in stock markets, where shares in companies are bought and sold, can affect many investments in pensions or individual savings accounts (ISAs). The FTSE, Dow Jones Industrial Average and the Nikkei have all seen huge falls since the outbreak began on 31 December 2019. The Dow and the FTSE recently saw their biggest one day declines since 1987.

The travel industry has been badly damaged, with airlines cutting flights and tourists cancelling business trips and holidays. Governments around the world have introduced travel restrictions to try to contain the virus.

Supermarkets and online delivery services have reported a huge growth in demand as customers stockpile goods such as toilet paper, rice and orange juice as the pandemic escalates.

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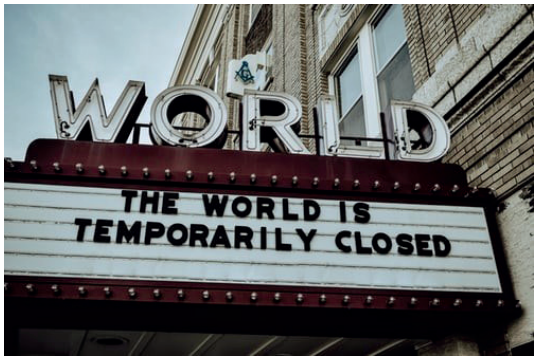
In order to stop the spread of the COVID-19 outbreak, many countries across the world have started implementing very tough measures. Countries and world capital have been put under strict lockdown, bringing a total halt to major industrial production chains.



In China, where the coronavirus first appeared, industrial production, sales and investment all fell in the first two months of the year, compared with the same period in 2019.

China makes up a third of manufacturing globally, and is the world's largest exporter of goods. It is the world's second-largest economy and leading trading nation, so economic fallout from this former COVID-19 epicentre will be critical to watch.

With two-thirds of the world's population living in developing countries facing unprecedented economic damage from the COVID-19 crisis, the UN is calling for a USD 2.5 trillion rescue package for these nations.

The pandemic continues to expand. More than 175 countries and territories have reported cases of COVID-19, the disease caused by the coronavirus (SARS-CoV-2). Some geographies have a handful of cases, others with early community transmission have a few hundred, and those with uncontrolled, widespread transmission have tens of thousands. Governments have launched unprecedented public-health and economic responses. The situation evolves by the day.

The shock to our livelihoods from the economic impact of virus-suppression efforts could be the biggest in nearly a century.

The aftermath of the pandemic will also provide an opportunity to learn from a plethora of social innovations and experiments, ranging from working from home to large-scale surveillance. With this will come an understanding of which innovations, if adopted permanently, might provide substantial uplift to economic and social welfare—and which would ultimately inhibit the broader betterment of society, even if helpful in halting or limiting the spread of the virus.

I believe this issue would be intriguing, thought-provoking and useful in reaching new milestones. I would be grateful if you recommend the journal to your peers and students to make this endeavor more meaningful.

All the papers published in this edition underwent the journal's stringent peer-review process involving a minimum of two reviewers comprising internal as well as external referees. This was to ensure that the quality of the papers justified the high ranking of the journal, which hopes to be one at par with one of the renowned and heavily-cited journal not only by authors and researchers in Malaysia but by those in other countries around the world as well.

I would also like to express gratitude to all the contributors who have made this issue possible, as well as the authors, reviewers and editors for their professional contribution. Last but not least, the assistance of the journal's editorial office is fully appreciated.

Horizon JHSSR is currently accepting manuscripts for upcoming issues based on original qualitative or quantitative research that opens new areas of inquiry and investigation.

The editors hope that the authors publishing in this journal can support the noble cause of Horizon in reaching its goals.

Chief Executive Editor
Nayan Deep S. KANWAL, FRSA, ABIM, AMIS, Ph.D.
CEE@horizon-jhssr.com

June, 2020.
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Articles in the journal are freely available to the public; thanks to our institutional sponsors.
PUBLISHED: 2020-06-15.

NOTE:

If I had written this piece in time for its original deadline, it would have been different in tone.

The pandemic is upending daily life, but its impact could be especially seismic on global economy and for higher education, and one that those in the field have little ability to affect. All of us, everyone reading this journal, are committed to a career of crossing cultures and borders. Now, we're house-bound. Some are stuck in various countries, stranded by travel bans. It is far from clear what next week, next month, next fall, next year will bring. When I speak with some veteran international global thinkers, they remind me of the field's resiliency and quick rebound after the September 11th terror attacks in the US. Others shake their head. *I've never seen anything like this*, they say.

Amid all the uncertainty, one thing I do know: You will help me make sense of it. As a reporter, much of my work, by its nature, is rooted in anecdote. The studies, both quantitative and qualitative, published here have shed light on the cultural adjustments inbound and outbound people face, given me new ways of conceiving of their identity, and highlighted the impact on labor-market outcomes of studying overseas, to name a few.

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INVITED ARTICLE

The Pandemic Paroxysm: Meltdown, Hope and Economy

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ABSTRACT

The curse of a virus has transformed the nature and purpose of our main achievements: Global Economy; Digital Revolution; and the Enlightenment. Modernity, civility and hubris are challenged by the mysterious ubiquity of invisibly incandescent and monstrously invincible microbes. The coexistence of two monstrous viruses — communal violence and COVID-19 — is an unmitigated catastrophe which breeds inequality, "resentment", and injustice. Not many apocalyptic events have brought such a paradigm shift as this staggering impact of a pandemic on the life and death of peoples.

Keywords: Coronavirus pandemic; global economy; inclusive equality; new Leviathan; paradigm paradox, COVID-19.

"The stark choices between life, death and economy" (*The Economist,* April 4-10, 2020) are reminders of limits of ingenuity, science and global economy. Modes of economy are products of politics that govern its culture, its exclusions and inclusions, the hierarchized structure of inequality. This brief essay is written in awe with humility. Aside from angst and despair, fear of a *New Leviathan* is unmistakably recognized with ominous implications for economy and human wellbeing.

Takeaways from history suggest that cataclysmic disasters have been followed by governing elites' control and manipulations. Wars have usually ended with greater centralized power over the lives and human conditions of the governed. A glaring Enlightenment-paradox is inescapable. Rise of 'deep state', domestic violence, ethnic intolerance, communal hatred, and scarcity amid abundance—all on account of lockdown during a monstrous global misfortune.

Adewale Maja-Pearce writes in *London Review of Books:*

> "Telling the majority poor to stay indoors may prove impossible. As more than one person in Bwari has told me, Nigeria is not 'London or America'. The point about a 'developing' country is that the majority poor depend on their daily wages to feed their families. It is hunger that people here fear, not a virus they can't even see." (2020)

We are going through a hideously paradoxical time in the wake of Coronavirus pandemic. Social distancing in a globalized economy is a both a paradox and irony. It looks like a curse of nature or a surrealist phenomenal delusion. It may also be viewed as a man-made disaster subconsciously directed toward self-destruction. The reality is: A pandemic is a global challenge, threat against humanity and a staggering failure of both science and politics. It's a rebuke to hubris manifested by China's phenomenal material success, European arrogance, Asian ambience, and American imperial delusions.

A Journey from Panopticon to "Coronopticon"

Michel Foucault envisioned modern society as a panopticon guarded by 'Big Brother'. Digital revolution has morphed into a more hideous reality. During a crisis, centralized control demolishes individual freedoms. In case of a pandemic like COVID-19, economy, science and the human condition will change for ever. *The Economist* raises a pertinent question: "Surveillance through apps and data networks can do much to keep COVID-19 at bay, but at what cost? (March 28-April 3, 2020:15-18). As

[1]The author is Dean Emeritus, School of Social Work, Louisiana State University. His latest books include *The Future of Social Work* (Sage, 2018) and *Social Policy on the Cusp* (with Guy Backman; Nova 2020). www.Brijmohan.org

I write this piece 7.6 million people registered for unemployment benefits; more than 10 million Americans lost daily wages. And we are far from flattening the bell curve.

***The Economist* has summarized the economic consequences of this pandemic:**

> "This week's cover reports on the shock ripping through the business world. With countries in lockdown accounting for over 50% of global GDP, the collapse in commercial activity is far more severe than in previous recessions. Numerous indicators suggest extreme stress. Global oil demand has dropped by up to a third; the volume of new cars and parts shipped on America's railways has dropped by 70%. Many firms have only enough inventories and cash to survive for three to six months. The exit path for those that survive will be precarious, with uneasy consumers, an efficiency-sapping stop-start rhythm, and tricky new health protocols. In the long run companies will have to master a new environment. The crisis and the response to it are accelerating three trends: an energizing adoption of new technologies, an inevitable retreat from freewheeling global supply chains and a worrying rise in well-connected oligopolies[2].

"Wall Street had its worst month since 2008, with the S&P 500 falling 12.5 percent in March as the coronavirus decimated the global economy" (*NYTimes.com*; March 31, 2020). Inequality, corruption and authoritarianism usually follow a mega-crisis. Benjamin Wallace-Wells, The New Yorker, reports that inequality has intensified in Detroit during this *coronacrisis*.[3] *The New York Times* reports: "President Trump effectively ousted the head of a watchdog panel overseeing how his administration spends trillions in coronavirus relief funds."[4] In light of Trumpian economics, it's not hard to imagine how corporate welfare and nepotism would benefit at the expense of those who really deserve immediate financial help. Arundhati Roy eloquently narrates a dismal reality:

> "The economic crisis is here. The political crisis is ongoing. The mainstream media has incorporated the Covid story into its 24/7 toxic anti-Muslim campaign. An organization called the Tablighi Jamaat, which held a meeting in Delhi before the lockdown was announced, has turned out to be a "super spreader". That is being used to stigmatize and demonize Muslims. The overall tone suggests that Muslims invented the virus and have deliberately spread it as a form of jihad."[5]

"The pandemic is a portal," Roy maintains:

> "As an appalled world watched, India revealed herself in all her shame — her brutal, structural, social and economic inequality, her callous indifference to suffering. The lockdown worked like a chemical experiment that suddenly illuminated hidden things. As shops, restaurants, factories and the construction industry shut down, as the wealthy and the middle classes enclosed themselves in gated colonies, our towns and megacities began to extrude their working-class citizens — their migrant workers — like so much unwanted accrual."

The horrors of this spectacle cannot be assessed if one does not know the banality of communal violence and intolerance in a populist democracy. Delhi may not be Cabo Delgado, but coexistence of two deadly viruses, communalism and COVID-19, is a frightening reality that imperils life and economy in the world's largest democracy. Ethnic and racial minorities are more vulnerable during economic stress.

Economies don't grow up in a social vacuum. There are permanent 'social distances' in-built in the engines of GDP and growth. People in power look for belief systems that legitimize their illegitimate expectation. *Hindutva,* for example, in India.

Search for ideology is a primordial attempt to design the society we create. Validation of preconceived notions requires persuasive, aggressive and often violent instruments of reinforcements. From archaic fiefdoms to post-revolutionary movements, ideological predilections have played havoc with humanity in the name of change, the only constant in nature. The search for a utopia continues while dystopian episodes keep on reminding us the futility of illusions of self-glorification. Karl Mannheim would turn in his grave at the present state of both 'ideology' and 'utopia'.

COVID-19 is a threatening challenge to much of hubristic planning. US has 4 percent of world's population but she has 30% virus victims. Politics of pandemics is a dangerous epoch beyond epidemiological-virologic implications. Limits of science invoke institutional narcissism and godly delusions. The barriers between facts and fiction breakdown. Welcome to a dystopian reality and its surrealism. Patricia Cohen and Tiffney Hsu report that "Jobless claims

[2]https://www.economist.com/leaders/2020/04/08/the-coronavirus-crisis-will-change-the-world-of-commerce (Accessed April 9, 2020)
[3]https://www.newyorker.com/news/news-desk/the-coronavirus-and-inequality-meet-in-detroit?utm_source=nl&utm_brand=tny&utm_mailing= (Retrieved April 7, 2010)
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now exceed 16 million as shutdowns from the coronavirus pandemic widen and problems with getting benefits persist." (NYT, April 10, 2020). More than 10,000 people have died worldwide. More than 200,000 people died in the US alone. The economic impact of this horrendous tragedy is incalculable.

A temple of reason must be founded on the ruins of a cult and dogma. Ideology serves as a euphemism to sustain *a priori* assumptions about beliefs, percepts and interests that must be maintained and perpetuated. From Marx to Modi, leaders of different hues and stripes have weaponized their beliefs of oppression, on rational and irrational bases, for vested interests in the name of redemption, revolt and revolution. Both *Manusmiriti* and Genesis may have to be rewritten if a civil society based on inclusive equality must be established.

In his latest book *Capital and Ideology* (2020), renowned French economist Thomas Piketty, the famed author of Capital in the Twenty-First Century (2014), explains how a dominant class of people invented conceptual tools of governance — aka ideology — to exploit powerless people. The Hindu 'caste system' is a perfect framework of institutionalized oppression beyond redemption. Both capitalism and totalitarian socialism are fraught with the evils of caste that predetermines the economic structure. Inclusive equality is the cornerstone of social justice. But there is something universally unjust and man-made about inequality. Modern capitalism is a product of such a perverse relationship between haves and have-nots. Rich get richer and the poor become poorer. This is a pernicious "neo-proprietarian" (Piketty, 2020) ideology which incubates inequality and perpetuates injustice. Globalization didn't fail us; humans failed humanity. "The West's obsession with home ownership undermines growth, fairness, and public faith in capitalism" (*The Economist,* January 18-24: 2020:9).

> "[E]economics developed an account of human behavior as far from Utilitarian morality as it is possible to get. Economic man is utterly selfish and infinitely greedy, caring about nobody but himself. He becomes the bedrock of the theory of human behavior, " writes Paul Collier, a noted development economist (2018: 10; emphasis mine).

Surveillance Capitalism heralds a new age of power that shall manipulate and constrain human freedom. Put simply, "rigged economy" is more than a game of profit-making. Shoshana Zubof (2020) shows:

> "We still have the power to decide what kind of world we want to live in, and what we decide now will shape the rest of the century. Our choices: allow technology to enrich the few and impoverish the many or harness it and distribute its benefits. The Age of Surveillance Capitalism is a deeply reasoned examination of the threat of unprecedented power free from democratic oversight. As it explores this new capitalism's impact on society, politics, business, and technology, it exposes the struggles that will decide the next chapter of capitalism and the meaning of information civilization. Most critically, it shows how we can protect ourselves and our communities and ensure we are the masters of the digital rather than its slaves."

Freedom and liberty are not analogous as generally thought. I explored 'freedom' and 'unfreedom' in a dialectical framework nearly 35 years ago (Mohan 1985; 1986). In *Development and Freedom,* Amartya Sen follows the same logic: "The removal of substantial unfreedom," he argues, "is constitutive of development" (1999:xii). Development is "seen as a process of expanding substantive freedoms that people have" (1999: 297). Individual freedom as a "social commitment" (1999: xii) looks benign but annihilation of the forces of oppression entails heavy burden on "individual agency".

The idea of "Social Choice" may earn a Nobel to economist Sen[6] but it does not help the poor *Everyman* to achieve justice in an unjust, unequal world. Bernard Sanders' egalitarian campaign may not have succeeded. His democratic socialism, however, has become a theme of mainstream discourse. That's not a mean achievement for a quiet revolutionary.

Absence of counterprojects opens vistas of historical alternatives which might define the future of capitalism and socialism. A $2-trillion-dollar disaster relief may not mitigate the American problem, but it redeems human endeavors for collective good. Even Leviathan, the 'big government', does not look that evil now.[7]

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The author has read and approved the manuscript and takes full responsibility for its contents. The author declares that no competing interest exists.

[6] *See* Emmanuelle Bénicourt's critique, "Against Amartya Sen". https://www.cairn-int.info/abstract-E_LECO_023_0072--against-amartya-sen.htm (Retrieved, March 30, 2020)

[7] A detailed narrative of the issues involved in this article is contained in my forthcoming book Social Policy on the Cusp with Guy Bäckman (NY: Nova, 2020; due out shortly). This article is a work in progress.

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Dr. Mohan is a prolific intellectual whose volumes of writings have nearly launched an international movement to "think critically and act globally." In a digitally revolutionized world, neither "social" nor "work" will remain the same.

He has earned numerous honors and awards including a D. Litt. from M.K. Gandhi Kashi Vidyapith and the Life-Time Achievement Award from National Association of Professional Social Workers in India.

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REVIEW

COVID-19 Impact on Business Sustainability: A Case of Micro-Small and Medium Enterprises in Malaysia

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ABSTRACT

This paper examines the impact of COVID-19 pandemic on business sustainability among nine micro-small and medium enterprises (SMEs) in Malaysia. The paper also reviews literature on the history of COVID-19 disease during the period of February 15th and April 10th, 2020 which hit the country. The paper analyzes three factors that play a role in the micro-SME's business sustainability before and after the Movement Control Order. These factors are resource allocation, compensation and working implementation. Data was collected using an online survey and personal telephone interview. The final sample from these nine SMEs was 30 entrepreneurs with 60% (18) males and 40% (12) females. The vast majority companies have between 11-50 employees. The participating SMEs by industry involved were in the consumer goods, transportation equipment, retail and wholesale and food services. This paper confirms with the past study that health and safety of employees have the utmost priority. Micro-SMEs are concerned about business sustainability where responses to develop continuity team to manage business sustainability and decision making highlight the micro-SME's move towards the COVID-19. Following conclusions from the analysis are drawn that micro-SMEs are concerned over business sustainability, acting proactively, and making timely decision towards the COVID-19 outbreak. The results of this paper offer insightful information for micro-SMEs readiness in identifying critical positions, arranging crisis management, and making decision during the crisis. These findings highlight the need for further research to determine the post-pandemic activity and recovery plan of micro-SMEs to react towards the COVID-19.

Keywords: micro-SMEs, sustainability, COVID-19, Malaysia.

Introduction

The COVID-19 pandemic and accompanying economic crisis have opened an immediate opportunity to protect a micro-SME and their employees from the worst effects of the COVID-19 pandemic. The World Health Organization (WHO) made the COVID-19 pandemic announcement in March 11th, 2020 which had a profound impact to businesses, education, and all other sectors of the economy. Consequently, the Malaysian government implemented the Movement Control Order (MCO) starting in March 18th to March 31st, 2020, as a move to curb COVID-19 outbreak (Government of Malaysia, 2020a, 2020b), in line with the Prevention and Control of Infectious Diseases Act 1988 and the Police Act 1967. The MCO period was subsequently extended every fortnightly depending on the current condition of positive cases recorded.

This pandemic has impacted the economic sector of the country, as reported by Tight (2020) that micro-SMEs will more likely be vulnerable and experience more damages across every stage of the moves towards sustaining their business operation.

The primary aim of this paper is to examine SMEs actions in managing the impact of the pandemic on business sustainability through assessing several indicators which help to address firstly, the underlying issues on resource allocation; secondly, the compensation strategy that assists several levels of employees to perform work remotely; and finally, on the working implementation. These variables will gauge several factors on how micro-SMEs operate and manage their businesses from home to ensure the maximum productivity.

COVID-19 Pandemic and its Implications on Business Sustainability among Micro-SMEs

The COVID-19 pandemic is affecting hundreds of thousands of people globally including business and a micro-SMEs operator. In perspective of business sustainability, the extent to which an organization through its leaders strategize to maintain business functions or quickly resuming them in the event of a major disruption, is warranted. Crucially, as the outbreak is spreading rapidly, business leaders also must make fast decision to encounter possible setbacks. This paper highlights the impact of COVID-19 pandemic on business sustainability among micro-SMEs in Malaysia.

According to SME Corporation Malaysia, a micro-SME is defined as a company with sales turnover of less than RM300,000 or employs less than five people (SME Corp, 2020). SMEs are a key driver to the Malaysian economy. The SME sector contributes to more than two thirds of the total employment in the country and almost 40 percent to the economy. Therefore, it is important for the sector to remain resilient in the face of economic pressures that are affecting the country during this pandemic.

In order to understand the way micro-SMEs manage crisis during COVID-19 outbreak, it is important to understand the factors of sustainability focusing on the immediate term. As of 16 April 2020, around the globe, there were 2,076,015 confirmed COVID-19 cases with 138,008 deaths recorded (Ministry of Health Malaysia, 2020). The total number of cases in Malaysia during the period of this study were 553 to 5,073 from March to April 2020 (Government of Malaysia, 2020b). Due to the current rise in trend of the COVID-19 pandemic, the Malaysian government has implemented a nationwide Movement Control Order (MCO) Phase 1 and Phase 2 which was expected to end by 28 April 2020.

The decision to impose MCO has witnessed number of implications on the way businesses are operated, allocation of resources and strategies implemented to maintain sustainability impact of addressing critical economic setbacks during this pandemic.

In order to sustain business of affected micro-SMEs, the Malaysian government had aggressively focused on mechanisms to support micro-SMEs, as announced on 27 March 2020 (Government of Malaysia, 2020b). Three mode of stimulus packages worth RM260 Billion (USD64.6 Billion) called PRIHATIN (the Economic Stimulus Package *Prihatin Rakyat*) was announced to cushion the impact of COVID-19 pandemic on Malaysian citizen including all businesses. Some of the stimulus packages offered include loan repayment deferments, wage subsidies, cash handouts and free Internet data for the next few months. On 6th April 2020, *PRIHATIN* Plus was announced as an additional package valued at RM10 billion to ease the financial burden of SMEs. In particular, the utmost agenda is to ensure businesses are maintaining their operations and to assure the workforce employability is sustained.

A Special *PRIHATIN* Grant amounting to RM2.1 billion was established for eligible micro enterprises (Government of Malaysia, 2020c). A grant of RM3,000 was provided to each company, benefitting almost 700,000 micro enterprises. The micro SMEs however are required to register with the Inland Revenue Board of Malaysia (LHDN) in order to receive this assistance. The local authorities and the Company Commission of Malaysia (SSM) will provide the list of eligible micro enterprises to the government.

The *PRIHATIN* Plus, interestingly had offered RM13.8 billion for the wage subsidy program to all companies with local employees earning a monthly salary of RM4,000 and below. The subsidies are:

- For companies with a workforce of more than 200 people, a wage subsidy of RM600 per month for every retained worker will be provided. The maximum number of workers that a company is eligible to claim for will be increased from 100 to 200 employees.

- For companies with employees between 75 to 200 people, a wage subsidy of RM800 per month for every employee will be provided.

- Finally, for companies with employees of less than 75 people, a wage subsidy of RM1,200 per month per employee. Through this improvement, companies will receive more benefits and assistance.

- This assistance is for a 3-month period and is specifically for employers registered with the Companies Commission of Malaysia (SSM) or local authorities before 1st January 2020 and are registered with the Social Security Organisation (SOCSO). It is estimated that 4.8 million employees will benefit from this initiative.

- For employers opting to accept this assistance, they are required to retain their employees at least for a period of 6 months, that is 3 months during the period receiving the subsidies and 3 months thereafter.

Source: Prime Minister Office, Government of Malaysia (2020c)

Managing well during this pandemic is the priority of every business owner and the stimulus packages offered from the Malaysian government is a big game changer. Among the important agendas that are needed to be focused on once the pandemic is over are the uncertainty and sustainability of business operation, post-pandemic business activity and recovery plan for the micro-SMEs.

In this paper, three factors that play role on the micro-SME's business sustainability before and after the Movement Control Order were explored. These factors are resource allocation, compensation and working implementation.

Methodology

A cross-sectional study was conducted among micro-SMEs with the assumption that entrepreneurs are aware of the strategy for business sustainability during the COVID-19 pandemic.

Data was collected using online survey and personal telephone interview. Questionnaires for this study were constructed based on specific items regarding the general COVID-19 issues and its impact on business sustainability, developed at the Universiti Malaysia Kelantan, with adaption from the survey of business responses to the Coronavirus outbreak in Singapore (MERCER, 2020). Nine micro-SMEs were involved in this study. The participants were well informed about the purpose of the study and provided consent for the usage of the data generated for publications.

The final sample from these nine SMEs was 30 entrepreneurs, with 60% (18) males and 40% (12) females. The sample had a mean age of 52 years old. Participating SMEs by industry involved include the automotive, retail and wholesale, services (non-financial), food and beverage services, transportation, and diesel trading. Participants provided informed consent to voluntarily participate in the study.

Results and Discussion

In Malaysia, the COVID-19 risk alert levels appear to have been raised and considerations for necessary adjustments related to its impact on business sustainability are discussed. Nine micro-SMEs organizations participated in this survey with the primary line of business include automotive (2), retail and wholesale (2), services (non-financial) (1), food and beverage services (3), transportation and diesel trading (1). All the participating organizations have frontline employees.

General COVID-19 Issues

In this sector, nine micro-SMEs were asked about the business continuity plan in place to manage their business during the COVID-19 pandemic. Only two micro-SMEs responded that their organizations have prepared for the consequences and shall implement the plan immediately. The remaining seven claimed that their organizations were in the process of developing a plan.

The pandemic has significantly impacted two out of the nine micro-SMEs because their employees need to work on-site. About seven out of nine organizations had claimed that their business needed to shut down.

As a result of the COVID-19 pandemic, majority of the organizations have taken several actions such as closing their retail outlets and offices.

The COVID-19 Pandemic Impact on Business Sustainability

Different sectors were affected differently during this pandemic therefore different mechanisms were applied to sustain the businesses. Retail sector including food and beverages services continue to operate while other sectors such as non-financial services, automotive, and transportation equipment claimed that they may see delay in demand. For example, in automotive and

transportation equipment sector, the organizations stated that there is a need to navigate the supply-chain challenges. Number of orders on automotive spare-parts for instance, is depending on the business network with suppliers in China. As the whole nation is aware, China is building up its capability measure internally during the COVID-19 crisis and therefore these sectors suffered.

Resource Allocation

The next section also explores possible preparation that micro-SMEs had to spend and put in place during the MCO period. Most spending is directed to three basic needs supporting employees' basic needs, preserving job, and assisting micro-SME businesses to survive post-pandemic crisis.

Majority of the organizations claimed that they have provided guidance and have increased communications among them in order to educate the employees to ensure their safety to commute and to be present at the worksite or at the office.

Compensation

In this section, the focus is to examine the extent to which the organization steps up to serve the workforce compensation. There are two categories of paid employees being questioned: the hourly rate employee, and the full time, monthly salaried employee. The issue is on the arrangement made by the company in response to the salary of the employee who were unable to work due to the quarantine imposed by the government during the MCO period.

Micro-SMEs claimed that for the hourly-paid employees, majority claimed that they do not have any employees belong in this category. However, in two of the responses on the hourly-paid employees who were unable to work remotely, the organizations negotiated to reduce the payment. In addition, with the recent announcement of the PRIHATIN Plus, for companies with employees of less than 75 people, a wage subsidy of RM1,200 per month per employee will be given. Through this initiative, micro-SMEs found that this scheme is helpful and agree that companies will receive more benefits and assistance.

No change was implemented on the salary for the monthly paid employees. 90% of the employers agreed to fully paid their employees during this MCO period.

Working Implementation

More than 30% of the respondents agreed that the organizations adhered to the mandatory company-wide arrangement for all employees.

Following the COVID-19 outbreak, more than 90% of the organizations closed their offices and only 10% claimed that they proceeded with the operation and monitored the work process closely.

Virtual teams, in response to the need to work on flexible hour, claimed that majority of the organizations are developing their own strategic checklist and best practices guides.

When questioned on the overall productivity of the workforce as employees work virtually, more than half of the respondents claimed somewhat concerned, 30% expressed very concerned while 10% claimed that they were not concerned.

Prior to the COVID-19 outbreak, more than 90% of the respondents claimed that they have less than 25% worked remotely on a regular basis.

Majority of the companies expressed that they were somewhat concerned on the reliability of their remote technology infrastructure. In ensuring the remote access availability works, more than 40% of the respondents had taken specific action to ensure outages are kept to a minimum; while 30% claimed that the management had installed extensive bandwidth testing. Approximately 30% of the rest of the respondents were not considering the remote technology infrastructure.

Conclusions

It is concluded that micro-SMEs are taking various opportunities in every crisis to work together for the good economy of its workforce, the business operation, and strategic plans for business sustainability. Despite all nations around the globe are facing similar complications, micro-SMEs are able to cope with immediate adjustments in the aspect of business sustainability such as managing and allocating resources, compensation issues and working implementation remotely from home. Micro-SMEs concerned over business sustainability and always act proactively and make timely decision towards the COVID-19 outbreak. The results of this paper offer insightful information for micro-SMEs readiness in identifying critical positions, arranging crisis management, and

making decision during the crisis. These findings highlight the need for further research to determine the post-pandemic activity and recovery plan of micro-SMEs to react towards the COVID-19.

Competing Interest Statement

All authors have read and approved the manuscript and take full responsibility for its contents. The authors have declared that no competing interest exists.

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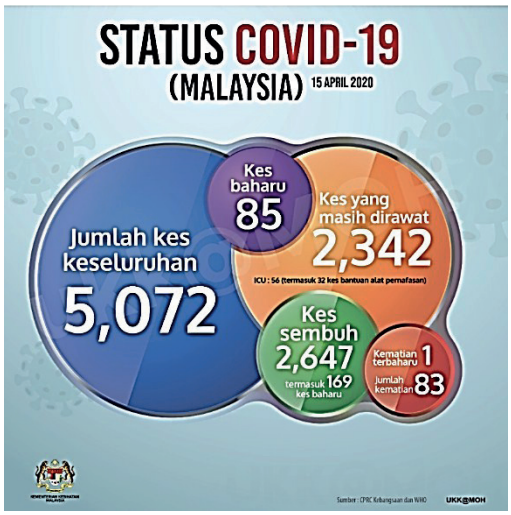

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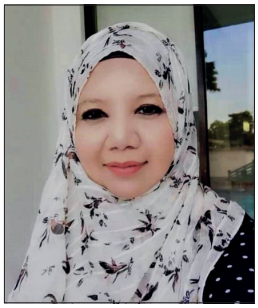

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REVIEW

Impact of COVID-19 on Indian Economy- A Review

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ABSTRACT

The World Health Organization (WHO) declared CORONA (COVID-19) outbreak a pandemic in the month of March 2020 (2nd Week). The WHO reached to this decision since the positive cases were/are rapidly showing the up-swinging trends towards 20 lacs with death toll crossed over to 1 lakh plus. The entire world (around 170 countries; all across the continents) is suffering miserably without having any vaccine to embark upon the virus to contain it immediately. As an only effective tool available to weaken the virus spread, the countries are helplessly exercising lock-down. This will surely affect the health of the economy of the countries and eventually the global economic condition. It is felt that this will bring the biggest slow down of 100 years in the world. India; as a fast developing country will have to face an extremely severe effect of this natural phenomenon.

Keywords: COVID-19, Corona virus, Pandemic, Lock down, Economic Shock, Forecast.

Introduction

Pandemics are large-scale flare-ups of irresistible illness that can enormously increase dreariness and mortality throughout the world and cause critical financial, social and political disturbance. Facts recommends that the probability of pandemics has expanded over the past century since of expanded worldwide travel and integration, urbanization and noteworthy misuse of the common environment. (Jones and others 2008; Morse 1994). These patterns likely be proceed and escalating. Notable approach consideration has centered on to distinguish and restrain from development of flare-ups that might lead to pandemics. There is a need to grow and maintain attentiveness and well being capacity (Smolinsky, Hamburg and Lederberg, 2003).

In spite of these changes, critical holes and challenges exist in worldwide widespread readiness. Progression toward assembling the IHR has been uneven, and numerous nations have found themselves incapable to meet essential necessities for compliance (Fischer and Katz, 2013' WHO 2014). Numerous episodes, eminently the West Africa Ebola plague (2014) have uncovered crevices related to the opportune discovery of malady, accessibility of essential care, following of contacts, isolate and confinement methods as well as worldwide coordination and reaction mobilization (Moon and others 2015; Pathmanathan and others 2014). These holes are particularly apparent in resource- limited settings and have postured challenges at local epidemic with desperate suggestions for what may happen amid a full-fledged worldwide widespread. The present-day pandemic spotlight on COVID-19 (coronavirus disease-2019) was earlier placed on Zika virus, H1N1, severe acute respiratory syndrome (SARS), chikangunya, Middle East respiratory syndrome (MERS), and Ebola. (Achonu C, Laporte A, Gardam M A. 2005).

The first case in India was noticed on 30th January 2020. In the last two and a half month, the positive cases have risen to 10,000 and death toll to 400. Sensing the horrendous situation of near future, the Indian Government had taken the earliest decision to lock down the country along with other effective measures. The Central Government of India is monitoring the situation with a paramount

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focus to contain it at the 2nd stage itself rather to let it move in the 3rd stage i.e. Community spread.

The nationwide lockdown declared to hold the corona virus spread is already started affecting industries and economy. The Investment Information and Credit Rating Agency (ICRA) of India said that "the Indian economy will face a sharp down trend in Q4 of FY2020 and it is expected to be fallen to 4.5%". "They are also anticipating GDP growth for FY21 shall constrain to around 2%". ICRA have indicated their concern for the domestic market of India which shall witness high impact due to the broken logistic chain of China. This will not only slowdown the domestic production (since the raw materials supply is affected badly) but also will undergo negative growth in the global export.

The current COVID-19 outbreak has provoked social stigma and discriminatory behaviors against people of certain ethnic backgrounds as well as anyone perceived to have been in contact with the virus. (Barrett R, Brown P J. 2008)

ICRA has also indicated their concern for the production, manufacturing and service industries amid the uncertainty of lockdown situation. They suspect that the situation will take a longer period to get normalization. "The negative trend of the economy will start giving indicators from 3rd week of the March 2020". The industries like construction, hotel, live event, travel, tourism will be the first one to be affected due to their nature of unessential.

The increasing number of emerging infectious disease events of international concern, such as severe acute respiratory syndrome (SARS) and the 2009 pandemic influenza A/H1N1, dictate a specific need to increase bidirectional communication between local governments and the international community. Recognizing this need, the Global Outbreak Alert and Response Network (GOARN) was formed in 2000 as a global collaboration to consolidate technical support for outbreak surveillance and response efforts (8), and the WHO's International Health Regulations (IHR 2005) were revised to update surveillance capacity standards and mandate reporting of disease events that may constitute "public health emergencies of international concern" (Chan E H, Brewer T F, Madoff L C, Pollack M P, Sonricker A L., and others. 2010).

The lockdown situation will lower the domestic demand. A situation of mass job losses and continuous cut in the pays for the next few months cannot be ruled out. Less money in the pocket of the consumer will defer the demand of unessential items and shall stick only to essentially of the livelihood. Since the impact of lock down will affect entire world hence the global demand will move to a historical slowdown. The markets of Europe, South East Asia and USA will be downsizing their import hence will be a big impact on Indian Export Houses.

Methodology

The present Research Paper is using Secondary Data by collecting Information on the present issue like websites, newspaper articles, magazines, Government reports, journals, etc. In line of this, the use of extensive Literature Review method has been implemented to carry out the present research meaningful. Literature review methodology is a proven tool to do secondary data base reviews. They serve and present solid grounds for future investigation. However both conducting a literature survey and utilizing it for strategy reason is continuously been challenging. However, in this study we had utilized them tactfully to build on incredible precision instead of conducting the same research once again. This provides a better understanding of the subject and clear vision for establishment of hypothesis.

Hypothesis

1. Null (H_o): There is a significant Relationship between happenings of COVID-19 on Indian Economy.

2. Alternate (H_1): There is no significant Relationship between happenings of COVID-19 on Indian Economy.

COVID-19 – An Economic Shock

The continued breakout of the COVID-19 pandemic has thickened the black cloud on the world economy. Global recession may return in most horrific appearance. This will bring disruptions in supply chain management by which the country like China will be affected badly. The lockdown condition of almost entire world will decrease the demand drastically which shall imbalance the financial situation of the world. The biggest currency of the world i.e. US dollar shall also be impacted.

The Indian economy had already been showing a downward trend in comparison to the last fiscal year 2018-19 from approx. 8% to 4.5% in Q2 & Q3 of the current fiscal year 2019-20. The world pandemic out brake has attacked India in a highly disadvantageous time.

The World Economic Outlook, "The International Monetary Fund (IMF) already down-ranked India's growing

progress to 4.8% for the FY2019 and revised it to more by 1.2% for the FY2020". All these reports came even before the outbreak of the COVID-19. It is expected that after Corona; the situation will become more pathetic.

The Indian economy recently had faced the demonetization and GST implementation (an effort to overhaul the system holistically). Though the economy is progressing fast to absorb the impact of this transformation; however, the unorganized sectors still have to go a long way. This has led a difficult state of affairs to few banks and non-banking financial institutions. NPA for a few has started showing an upward trend since they were involved in the doubtful lending practices to ill business houses. India did come out with many schemes and plans to increase its presence in the global economy but eventually, those were not yielded enough compare to their expectation. 'Make in India' is one of the examples of such initiative which was aimed to boost the export of Indian makes.

Impact of COVID-19

The global impact of COVID-19 has already been started unmasking its monstrous. Avatar on the Indian economy. The financial sector is the first to get a dent. The Indian rupee is touching to an all-time low on every next day against USD. The free flow of downward rupee is bringing an unprecedented situation to the Indian organization to settle their dues in USD. On Internal front, India is already struggling with low demands in almost each sectors i.e. Manufacturing, Production, Construction, Services, Logistics, Transportation, Tourism, Hospitality etc. the lock downs and other measures to contain the pandemic have further cornered the demand especially to recrimination goods/services.

The recent fall in oil prices brings some relief but that is not enough to curve the bad impact of the situation. India declared self-imposed 'Jaanta curfew' on March 22 which was hugely respected by the citizen of the country. Now all States & Union Territories (30) have declared lockdown and implementing it seriously along with other measures. This will have a long-lasting effect on the Industries. The Industries and workers of the informal sector will enormously be affected for fairly a long period.

The lockdown somehow is holding the speed of spread of the virus (if compare it with the other countries) however anticipation of its comeback cannot be ruled out once the lockdown is removed. Mr Vivian Balakrishnan, the hon'ble Foreign Minister of Singapore recently has said that COVID-19 is "an acid test of every single country's quality of health care, standard of governance and social capital. If anyone of this tripod is weak, it will be exposed, and exposed quite unmercifully by this epidemic."

Macroeconomic policy

In this turmoil time, it is necessary to accept the challenge to uplift the sentiment of the industries and the people. The target set by the FRBM *(Fiscal Responsibility and Budget Management Act, 2003 - Act of India to institutionalize financial discipline, reduce India's fiscal deficit, improve macroeconomic management and the overall management of the public funds by moving towards a balanced budget and strengthen fiscal prudence)* need to either put off or deferred for a while till the situation is consolidated and returned to the normalcy. The Reserve Bank of India (RBI) - the central bank of the country has started reforming to boost in this time of economic distress. The Bank has relaxed the long-term repo operation (LTRO) rate and offered $2 billion for the next 6 months to support Indian rupee. The Indian Govt. has also announced historical economic & social packages to support various sectors of the industries as well as the livelihood of the country people.

Though the RBI and the Indian Government have rolled out various stimuli however it is not known if these are adequate. The impact of corona virus will only be estimated; exactly, once the economy is ready to move. It all depends on the Indian Government that how it will respond to the emerging challenges. The Government will require readjusting its focus to deal on the economic front; stabilize it and uplift from the darkest historical hole. Need to ensure balance in social and political agenda along with economic priorities.

Fitch Solutions: Fiscal deficit of India may rise to 6.2% of GDP in current year

Fitch Solution said that "amid COVID-19 they have revised the forecast of fiscal deficit for India's current financial year from 3.8% of GDP to 6.2%". The lock down situation will bring massive backward push to the industries thus collection of revenue and taxes. The situation will only mount pressure to the Government to arrange more bank borrowings to settle expenses.

Moody's downsized GDP forecast for India to 2.5%

Moody's Investor Service (Moody's) has also remarked that India's economic growth will be in depression in the current FY due to maximum contribution of Corona. "It

is expected that it will go down to 2.5%. However, the agency has forcasted overall 5.8% growth for the FY2019-20. Moody has also predicted a negative growth in the global export to 0.50%".

FICCI's survey revealed that 53% of businesses will directly be affected

As per the survey of FICCI (Federation of Indian Chambers of Commerce & Industry) done amid Corona; around 53% of industries and businesses are directly be got affected by the COVID-19 shutdown. The aviation and hospitality industries are finding it difficult to continue with the salaries of their employees hence the phenomena of laying off staff and downsizing of the salaries are either started or shall shortly be seen. It is estimated that the industry will have to lose US$420 million.

Sector-wise Micro Economic impact of Corona

Manufacturing and Production

The manufacturing & production sector of India is tremendously suffering due to the lockdown situation. All big guns like L & T, ITC, Dabur India, Grasim Industries, Ultra Tech Cement, Aditya Birla Group, Bharat Forge and many others have put off the production completely. Many Logistics and Motor companies like Maruti, Hero Honda, Escorts left no other option but to abide by the lockdown situation for 21 days as declared hence had shut down their production till the Government announce reopen. However, the lockdown is all set to go even further.

E-Commerce

From the 3rd week of March, almost all E-Commerce companies i.e Amazon, Flipkart, Big Basket, Grofers have decided to focus their sale only for essentials goods due to the legality involved in the essential and nonessential items during the lockdown situation. The Police are also giving permission only to those delivery persons who are carrying the essentials goods.

Agriculture

Due to the lack of logistics and the unavailability of labor; the agriculture sector which is the largest contributor in the economy with approx. 18% is finding it difficult to manage with this mammoth challenge. The crops are now all set and ready for harvesting. However, due to the unavailability of logistics, transport, packaging and labour, there is a fear that a big portion of the crops will rot in the field itself. Likewise; production of Tea & Coffee is also comes to a standstill.

Service and Live Event Sector

Though the service industry of India too shall not be able to get an escape from the hard bite of the lockdown situation of Corona Virus; however the organized sector in Education, IT and Knowledge shall able to perform its duties from the home to an extent and minimize the losses. The Live Events Industry has been closed down completely to maintain social distancing. It is estimated that the industry will lose around INR 3,000 crore. The App-based cab business is fully flattened due to COVID-19.

Aviation and Tourism

Tourism and Aviation is a big contributor to the Indian economy with 7.5%. KPMG has reported that the Indian Hospitality Industry is progressing with 16.1%. A large no. of national/international tourists and businessmen visits various places in India every year. The suspension of Tourism and Aviation activities shall hugely be impacting the Indian Economy and will take a lot of time to revive. There is a fear of an increase in the operations expenses thus ticket cost for the traveler which ultimately will lower the demand.

Stock Market

The Stock Market in India becomes volatile in this period. The SENSEX fell 4000 points (13.15%) on 23rd March 2020 which is the biggest dip in the history. The Sensex, however again on 25th March 2020 witnessed its biggest gain of the decade. The volatile situation is continuing; resulting in weaken confidence of the investor in the economy and its progress.

Since China is a big Import-Export partner of India hence Corona will bring a negative impact to the business balance of two big economies. India has already seen 40% slid in the import of electronics items from China and the reversal impact is possible to be seen in the export stock of Indian cotton and mineral. For pharmaceutical too, the Indian industries are dependent on China for API (Active Pharmaceutical Ingredients) which is 70% in present. The inaccessibility of logistics is making the situation even more worsen.

The companies are trying hard to manage the situation. They are supporting their staff to hold the nerves during this testing time. Companies like Hero Motocorp, Tata Group, Siemens, Infosys, Reliance, Bajaj Finance, Wipro have asked their workforce to work from home where ever is possible. The immature and recently started start-ups are affected maximum since their financial is sabotaged. For an example, 45% decrease is reported in the Datalabs report as compared to the last year growth. The Job Market in India too is fearful to face mass loss of jobs of around 50 million. The estimation is figured out by the Centre for Monitoring Indian Economy. CMIE has further analysand that the unemployment rate shall rise from 8.4% to 23% and may continue declining.

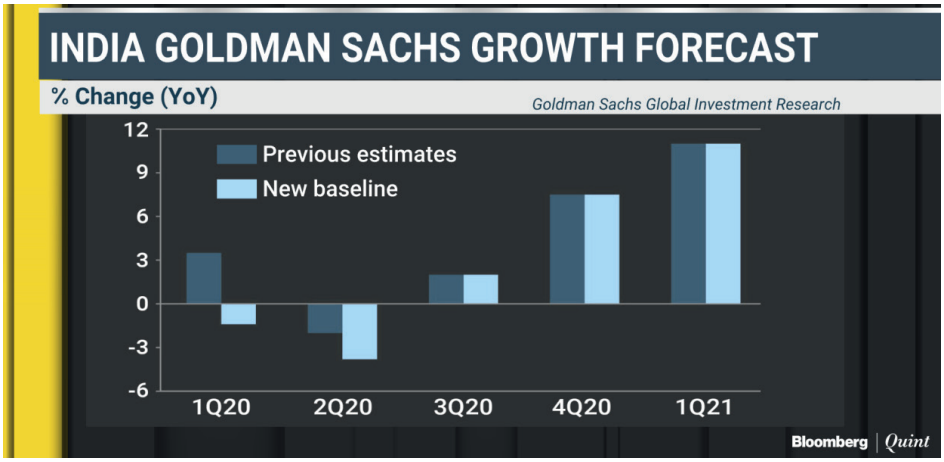
The KPMG report on impact of COVID-19 found a paradigm shift. They predict that businesses will change their working style and strategy as under:

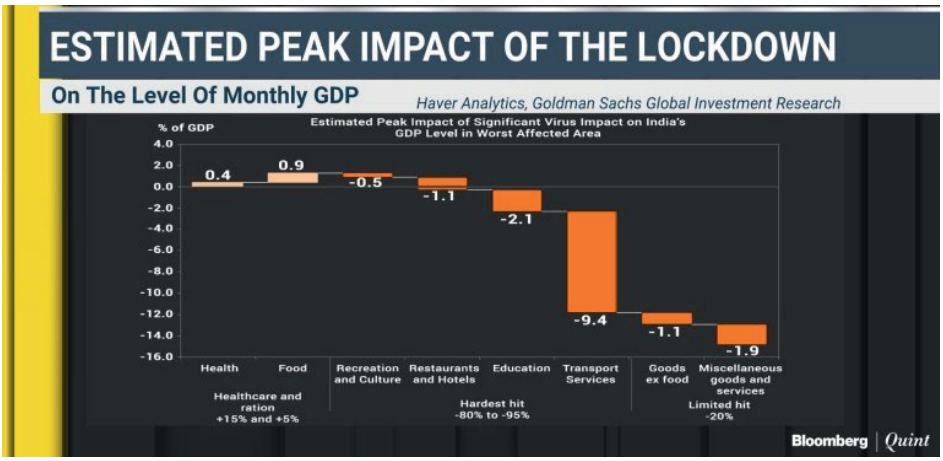
- The businesses will shift to localization.
- Digital will get a real push.
- Cash is king for business
- Cost model business
- Increasing sensing and control intelligence
- Supply Chain Resilience
- Building agility

Conclusion and Suggestions

India is already falling short in meeting its growth expectations in the last two FY. The GST collection is also not at par. The situation of COVID-19 is aggravating the financial health of the country even more worsen. As per the UN report, India will be impacted by $348 mn on its trade due to Corona Virus. The figure shall increased even further depending on the period of lockdown, locally & globally.

Hence, Null Hypothesis has been proved successfully that there is a significant relationship between the happening of COVID-19 and fall of Indian Economy.





Pre Closure Charts

The prediction on Indian growth and Impact of lock down can be understood by referring the analytical charts by Prachi Mishra, Chief India Economist, Goldman Sachs. *(copy write to Bloomberg Quint).*

Coronavirus Impact: Goldman Sachs Sees India GDP Growth Plunge To 1.6% In FY21. Ira Dugal @dugalira
Source: https://www.bloombergquint.com/business/covid-19-impact-goldman-sees-india-gdp-growth-plunge-to-16-in-fy21

It is expected that in the short term the price of logistics, transportation, freight and many other services will rise. The Government is taking all possible measures to handle it efficiently however the exact impact shall only be known once the corona period is over. The economy is expecting no. of financial packages (5% to 10% of GDP) to overcome this historical slowdown. The Government till date has announced two financial stimulus (INR 1.7 lack crore and approx. 1 lakh crore along with 17000 crores to the state governments) to boost the sentiment of the Industries and the people. More stimulies are expected and believe to be in pipeline. Apart to this, the Government should also consider few more steps as under:

1. To cut various fiscal rates such as repo rate.

2. The tax rebate in the export should be continued.

3. The tax collection may also be considered to be rationalized hence industries will look for relaxation in the GST as per the need of the hour.

4. DBTs {Direct Benefit Transfer} should be exercised more effectively.

5. Availability of Working Capital and Loan facilities shall require to be more friendly's.

6. The expenses on Govt. Machinery must be brought down especially on transportation, salaries, comfort, events, etc.

7. There should be a good coordination & belief situation between Central Government and the State Governments.

On positive side, India can also consider this situation as an opportunity to increase its export to the various part of the world. Overall it is expected that India will be able to curb this pandemic even more efficiently than its counterparts hence shall display speedy recovery on economic parameter too. The Government is required to give priorities to the economic measures to boost the economy along with obvious social & political agenda.

Competing Interests Statement

We, as the authors of this review paper don't have any competing interest personally or professionally.

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Mr. Ajay Kumar Poddar, born on 2nd Jan 1973 at Delhi in India, obtained his graduation degree in Commerce in the year 1993 with his first Post Graduate Degree in (Commerce) in the year 1995 and then added another Post Graduate Degree in (Management) in the year 2010. He already has finished thesis work for award of PhD (Management) and is expected to be awarded PhD in the month of August 2020. He is having an enriching academic-cum- administrative leadership experience of almost 26 years in various institutions and Universities of repute in India and Africa (Zambia).

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OPINION

No Going Back: The impact of the COVID-19 Pandemic on Corporate Language and Communication Training

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ABSTRACT

This is an opinion piece written in Cologne, Germany, during the initial months of the COVID-19 outbreak. Information at this stage is preliminary and fast-moving. The objective here is to provide a personal view of the likely impact of the phenomenon. I have based my opinion on various communications from management consulting groups, non-governmental organizations, investment banks, learning and development professionals, education specialists and training outfits. The views expressed here are my own and are in no way intended to reflect the views of my employer.

Keywords: corporate learning and development; online delivery; pandemic response, disruption; education; digital transformation; language and communication training; digital pedagogy.

Introduction

In this paper I will argue that the COVID-19 outbreak and the associated corporate response will trigger an unprecedented expansion of digitally mediated language and communication training worldwide. I will further argue that this is not likely to be a temporary phenomenon, but rather a deep shift to a new normal as human behavioural patterns adapt.

My argument consists of the following component claims:

1) COVID-19 will have both a severe and long-lasting impact on business operations globally

2) COVID-19 has acted as an accelerator, generally causing existing trends to surge ahead dramatically.

3) The shift to remote work will continue to accelerate due to the need to protect the health of employees, as well as the cost-savings involved in reducing corporate office space expenditure

4) Remote work will be increasingly efficient and therefore widespread due to the implementation of 5G telecommunication networks and software for virtual collaboration

5) There is a meaningful qualitative difference between unmediated and computer-mediated communication

6) Computer-mediated language and communication training requires specialist digital pedagogy

7) Specialist digital training providers are best-placed to provide resilient and effective training solutions

8) Specialist digital training fits within the existing trend toward digital transformation of corporate learning and development, which is being accelerated by COVID-19.

My conclusion is therefore that specialist digital training providers are likely to dominate corporate language and communication training in the years of the COVID-19 impact and indeed, thereafter.

The body of the text will address each of these premises in turn.

COVID-19 will have both a severe and long-lasting impact on business operations globally

In the period between 31 December 2019, when it was first reported to the World Health Organization, and the

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time of writing, 10 May 2020, COVID-19 has infected over four million people and killed just short of 280 000. (WHO, 2020). World governments have responded with severe measures aimed at limiting interpersonal contact in order to prevent healthcare systems from collapsing. This has meant that massive numbers of white collar workers cannot return to the office. Leading virologists do not agree on when lockdowns may be lifted and there is an ongoing threat of second and third waves before a vaccine or treatment may be found. Senior economists are now openly comparing the impact to that which triggered the Great Depression of the 1930s (Braun, 2020).

Phenomena of this scale have historically caused lasting social changes that outlast the trigger events. The Boston Consulting Group (2020) expect COVID-19 to have a similar effect on attitudes, policymaking, ways of working and consumer behaviour.

COVID-19 has acted as an accelerator, generally causing existing trends to surge ahead dramatically.

The pandemic has allowed us to observe in real-time the accuracy of Frank Snowden's thesis that "infectious diseases have shaped social evolution no less powerfully than have wars, revolutions and economic crises." (Spinney, 2019). It is increasingly apparent that COVID-19 has brought forward changes that would have occurred anyway. Frances Donald, chief economist at Manulife Investment Management, made this point in a recent Bloomberg appearance. "…we're compressing what would typically happen over a twelve month or longer period into a three- or four-month period" (Donald, 2020).

Interestingly, the view from Asia, where the virus has generally been better managed than in the West (Deep Knowledge Group, 2020), is that online education is

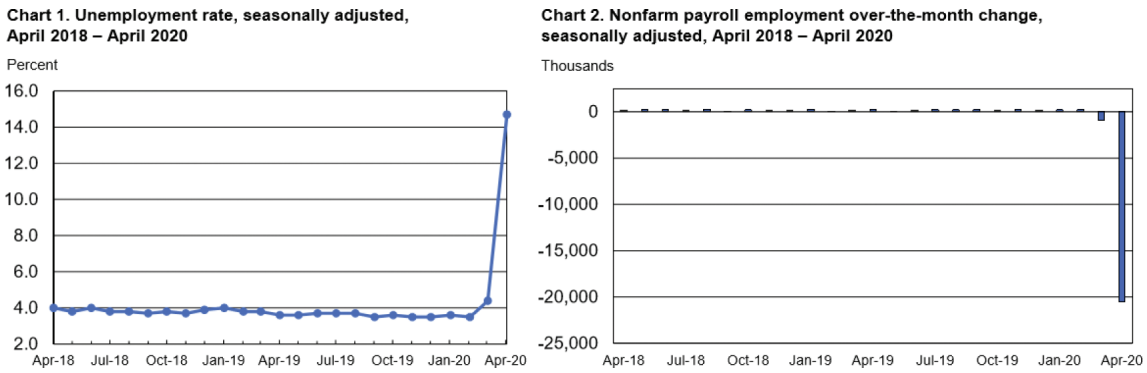

Figure 1: United States of America Bureau of Labour Statistics April 2018-April 2020

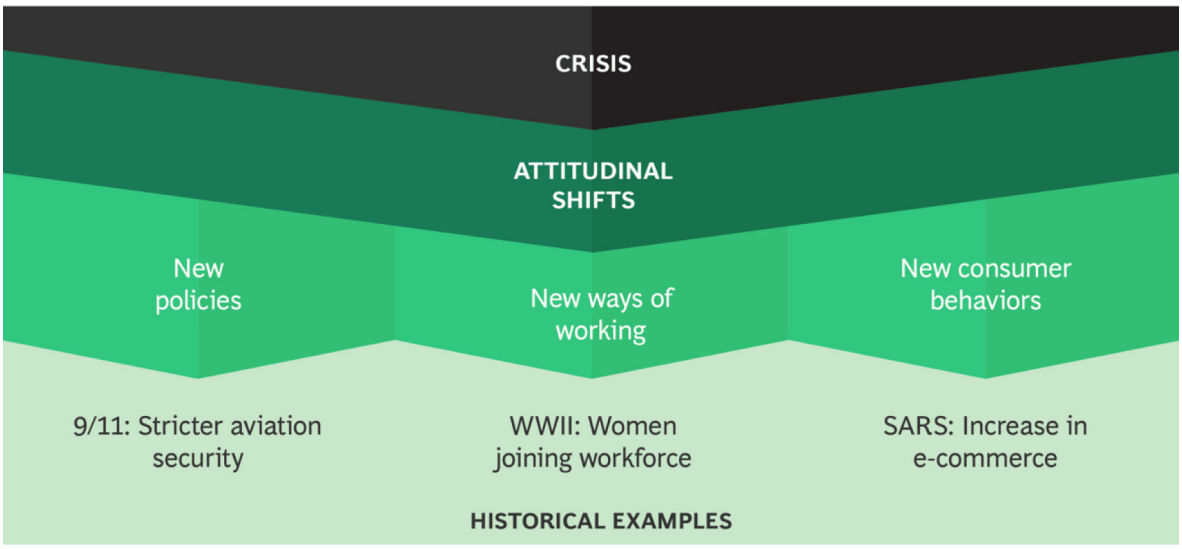

Figure 2: Boston Consulting Group diagram: Crises often lead to Long-lasting Changes

surging at a rate never before experienced. The dam wall has broken and behavioural change long predicted has materialized. While there is debate to be had regarding the degree to which the Asian experience can be generalized as a guide to the future of West, the magnitude of the phenomenon bears close observation. The *Financial Times* reports that Asian edtech startups simply cannot cope with the increased demand. "…one Chinese provider, Yuanfudao, suffered a two-hour system crash last month after 5 million people took up its offer of free live courses, the company said" (Ruehl et al. 2020).

In geographies such as China and India, which are so vast that rolling out a brick and mortar school infrastructure would be prohibitively expensive and where finding sufficient locally-based native-level instructors to meet demand has proven increasingly difficult, there is a serious shift to remote solutions. "Online learning is the future and if there was no virus, that realization would have taken another few years, but this has accelerated the process," said Li Kang, Ai English executive director (Ruehl, 2020).

The shift to remote work will continue to accelerate due to the need to protect the health of employees, as well as the cost-savings involved in reducing corporate office space expenditure

There is a great deal of pressure on companies to return to pre-COVID levels of productivity. However, the health and safety of employees is an integral element of a sustainable return to growth. (World Economic Forum, 2020) One key avenue available to employers has been that of expanded remote work. Already a rapidly developing trend, working from home has boomed as a result of the pandemic. HR industry analyst Josh Bersin held a webcast in late March 2020 featuring seven of the world's leading HR figures. On his blog, he reports that "Diane Gherson (CHRO of IBM) told us that today 95% of IBM's workers are remote." (Bersin, 2020). A March 17 survey of over 800 global human resources executives by the market research company, Gartner, showed that 88% of organizations have encouraged or required their employees to work from home and that 97% of organizations have cancelled work-related travel (Gartner, 2020).

Remote work will be increasingly efficient and therefore widespread due to the implementation of 5G telecommunication networks and software for virtual collaboration

McKinsey Global Managing Partner Kevin Sneader believes that remote work is here to stay. "The shift [to working] online has now been given a boost, and it's hard to see that being taken back to where it was before." (McKinsey, 2020). One of the reasons for this assertion is the increasing efficiency of the remote work model. In the past, one of the most critical obstacles to successful home office collaboration was to do with the coordination of virtual team project work. Documents were often inaccessible, video and audio connections of poor quality and team rapport weak. This is changing rapidly. Josh Bersin (2020) actually states that "Microsoft Teams may be one of the *most successful products* ever built." An integrated file sharing, videoconferencing and chat application, Microsoft Teams has experienced a surge in users, adding 12 million users in a single week during the COVID-19 pandemic, and reaching 44 million users globally (Paayal, 2020).

Software applications have previously struggled to ensure smooth virtual collaboration due to slow data transmission speeds. A major trend concurrent with the pandemic is that of the implementation of 5G (fifth-generation) telecommunications infrastructure and the two combined phenomena are driving change deeply and rapidly. With Internet speeds reaching 100 times faster than current infrastructure will allow (Ericsson, 2020), cloud-based solutions will surge ahead. Through this revolution, combined with haptic technology to convey touch through the internet, many more types of work will become feasible remotely. The implications of this revolution are enormous. Companies will be able to avoid extortionate rental or purchase costs for real estate in sought-after locations. Geography – for the most part of the employee base – will become irrelevant if time zone differences can be managed. People may choose to live outside of densely populated areas, knowing that physical commuting will be a thing of the past.

"Over the next five years, 5G will enable the workforce to become more distributed," states David Linthicum, chief cloud strategy officer at Deloitte Consulting, "You can be anywhere and have access to unlimited bandwidth." (Field, 2020)

China has led the world in the pursuit of the hard technological capacity to enable next generation internet speeds. In late 2019, they launched "the largest commercial operating 5G network in the world." (Zhao, 2019). The issue is so important that it has sparked major geopolitical discussion regarding China's rise as a major world power. Nations that develop 5G faster will hold a considerable economic advantage over those who lag behind.

National European governments also plan for an imminent, large-scale rollout of 5G infrastructure. Germany

plans 100 mbit/second speeds in 98% of households by the end of 2022. Importantly, "National mobile operators agreed to…provide reliable voice and data services in 99% of households nationwide by the end of 2020" (European Commission).

In the USA, Verizon CEO Hans Vestberg has said that "half the U.S. will have access to 5G by the end of 2020." (Wasserman, 2020) Major investments are being made by the US government to fast-track 5G implementation and as Todd Wasserman reports for CNBC, the Coronavirus pandemic may be the "catalyst for 5G that the world needs" (ibid).

There is a meaningful qualitative difference between unmediated and computer-mediated communication

When employees communicate using virtual team software, they are engaging in new and complex behaviours that traditional language instruction does not prepare them for. The Council of Europe updated the Common European Framework of Reference for Languages accordingly, including descriptors for online communication. As the Companion Volume of 2018 states:

> There are emergent properties of group interaction online that are almost impossible to capture in traditional competence scales focusing on the individual's behaviour in speech or in writing.
>
> The European Commission, 2018

The new descriptors cover specific aspects of online communication. Importantly, under the section "Goal-oriented online transactions and collaboration" the authors note that "the rigid separation between written and oral does not really apply to online transactions" (ibid, 2018). Indeed, modern business communication is often multimodal, combining documents, images, videos, audio tracks and live speech. Moreover, the collaborative nature of modern online work means that document drafting often requires synchronous, as well as asynchronous coordination with colleagues. An example of a high-level descriptor is the following "Can participate in complex projects requiring collaborative writing and redrafting as well as other forms of online collaboration, following and relaying instructions with precision in order to reach the goal" (ibid, 2018) .

Pragmatics, the study of how language use is influenced by the context of its use, provides a useful lens from which to view the specifics of online communication. The simple fact that employees are using video links and chat tools to communicate alters the unwritten rules of proper practice. While appropriateness is always important in society, it is arguable that the stakes are higher at work. (Waugh, 2013). How does one politely request the floor in a Microsoft Teams call, for example, without interrupting the flow of the speaker? How can one discreetly request access to a document that they are not able to view?

Computer-mediated communication requires specialist digital pedagogy

It is not enough for corporations to simply combine virtual collaboration tools and existing face-to-face teachers and curricula. Organizations are now discovering that the rollout of effective solutions requires deeper consideration than may previously have been assumed.

> …one of the most important lessons of the forced adoption of remote instruction may turn out to be the realization that pedagogy, rather than technology, is the key ingredient for delivering effective education online.
>
> Genone, 2020

We have established that computer-mediated communication differs qualitatively from traditional modes of communication and that reputable institutions have begun to address this with a view toward education and training. We are now at the point that a specialist digital pedagogy has begun to emerge.

Teacher roles have expanded to build on the existing subset of skills required by traditional classroom teaching to include first-level IT support for learners, mastery of virtual classroom software, integration of web-based multimedia resources and more.

Task-based learning is a methodological approach used in language and communication training that focuses on the completion of real-world tasks. (Nunan, 2004) This approach fits well within the online delivery mode and the ideal instructor is a "skilful, responsive, knowledgeable teacher who is able to cope with groups of learners and access relevant material as the need arises" (Skehan, 2002, p. 295).

Learning material and role-play/simulation activities must also adapt for use in this environment. Given that corporate communication has shifted to an online mode, authentic tasks for communicative language lessons must reflect the changing environment. Leading and participating in virtual meetings are skills that now underpin success in global projects. As Long (2016) argues,

communicative tasks that have the resolution of realistic problems as a central goal, help learners to deploy target language as a pragmatic tool at work.

Specialist digital training providers are best-placed to provide resilient and effective training solutions

As Josh Bersin (2020) points out, "Black swan events are here to stay." As humankind negotiates global warming, sea level rising, wars, terrorism and so on, our ways of working will be disrupted further. The concept of resilience in training solutions will be increasingly critical when corporations carry out risk assessments.

> Employee training and development programs are the first things that corporations cut in times of recession…. but far-sighted leaders will…. keep investments in programs that support education delivery systems that are better able to withstand a variety of crisis scenarios.
>
> Horn, 2020

As in the parable of the grasshopper and the ant, those who have made serious provisions will find themselves in a far stronger position than those who have not. Forward-looking human resource departments have been strengthening their digital capacity for years. The lesson learned is that this investment has enabled much-needed continuity in this crisis. I would fully expect expanded digital programs in future to receive funding as a result.

> I would add that almost everything we've done over the last ten years (cloud platforms, focus on employee experience, understanding employee journeys, implementing people analytics) is all coming together with this new focus on crisis response and resilience. You need all these programs to respond in a vigorous and local way to this crisis.
>
> Bersin, 2020

The online learning industry moves forward in fits and starts and it seems that we are in the middle of a dramatic phase of change. Industry insider Josh Bersin senses another major shift in motion:

> I've been a part of the online learning industry since the beginning (around 1998), and it is an enormous marketplace that quickly adapts to trends. Whenever a big tech or social change occurs, the market adapts quickly.
>
> Bersin, 2020

There is certainly fertile ground as the learning and development industry is in need of deep and drastic change. Learning and development departments are struggling to convince the board of the business impact of their training interventions. This can be the difference between further funding of a training initiative, or its cancellation, even in good times.

> …despite more than $300 billion spent globally on corporate training and education each year, much of it is considered ineffective–and most likely *is* ineffective. One survey found only 8% of CEOs saw a business impact from learning and development (L&D).
>
> Christensen, 2020

This is where learning analytics and reporting dashboards will come into their own. With these tools it is possible to gather and translate large, complex data sets regarding training efficacy into visually meaningful graphics. According to Omer (2019), there are perhaps four key areas in which this data can be used to align with corporate strategic interests:

a) Descriptive analytics – tracking data like course enrolment, completion of exercises, test scores and missed sessions allows training managers to see what is happening on the ground. In globally distributed teams, having this information in one place makes life a lot easier for those responsible for the success of training programs.

b) Diagnostic analytics – data may be used to determine why certain phenomena have occurred. Employees from different national offices may have scored radically differently on the same learning assessment. Perhaps employees at different hierarchy levels have behaved differently. The data allows learning and development professionals to track and form hypotheses as to why things may have happened.

c) Predictive analytics – this is a critical area and one that will become more important in the future. Large datasets enable observers to make educated guesses as to what is likely to happen in the future. This can act as a useful early warning signal where learner behavior (missing a certain percentage of classes, scoring below a certain amount on a test) may fit a pattern of learners who have later dropped out of courses.

d) Prescriptive analytics – by analyzing data that covers what learners actually know and what the strategic aims of the company require them to know, course content may be accurately composed.

Specialist digital training fits within the existing trend toward digital transformation of corporate learning and development, which is being accelerated by COVID-19.

It is my view that corporate learning and development solutions will mirror the shift in working models. It stands to reason, for example, in the field of language and communication training that training should be conducted in the same delivery mode as the majority of business communication. Creating a return on investment for corporate buyers requires a transfer of skills to the point of work. Levels 3 and 4 of the Kirkpatrick Model (Kirkpatrick Partners 2020) refer to changed behavior and the level of influence that training has on work performance. It follows logically that virtually delivered training for participating in meetings, for example, should transfer to better performance in virtually-held meetings and therefore less waste, more efficiency and associated cost-saving. In other words, when business was conducted face-to-face, training was correctly held face-to-face. Now that the dominant mode of business meetings has changed, training should follow suit.

Certainly investors and management consulting firms are in line with this prediction. "Online education is an irresistible trend," said Claudia Wang, a partner at Oliver Wyman, the consultancy. "There is a lot of online tutoring, and we expect the paid user base to double or triple in 2020 . . . and customer acquisition costs should fall drastically in the short term" (Ruehl, 2020).

Conclusions and Suggestions

As discussed in this paper, it is my view that changes made during the intense initial phases of the pandemic, may be retained on their merits. For example, once HR departments have seen how well teams have collaborated using remote working tools, they are likely to reevaluate their rental expenses on office space. Once employees are used their new habits, they will be loath to give them up. As Frida Polli, CEO of Pymetrics told Martin Reeves of the Boston Consulting Group in a recent interview "Once that threshold has been crossed, it's really hard to say, "I'm not going to do that anymore." (Reeves, 2020)

We are likely to see a business world with less business travel, a more digital business world, a more crisis-conscious business world that is prepared to make deep changes without warning. Agile specialist digital training institutions will flourish as vast numbers of employees need to be reskilled and upskilled.

In closing, however, I would stress that technological solutions are not in themselves a panacea and that not all organizations are currently able to take advantage of the benefits of online delivery. Development of the technological infrastructure is a necessary, but not sufficient condition for effective large-scale digital training. It should not be forgotten, as the World Bank (2020) points out: "much greater challenges relate to supporting teachers so that they can in turn support learners in a new learning environment."

Competing Interests Statement

The author has declared that no competing interest exists.

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OPINION

Malaysia's 2020 Twin Crises: Opportunity to Shape a National Identity Through Creative Narratives

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ABSTRACT

This paper presents the writer's perspective on the COVID-19 pandemic as it affects Malaysia. The health crisis eclipsed the political crisis that hit the nation just as the disease began to spread in Malaysia. This paper proposes the use of creative narratives built upon commonalities among Malaysians as a more effective route to recovery in post-crisis Malaysia than the power narratives of local politics. Creative narratives are advocated as a nurturing space for the depiction and sharing of such commonalities. Creative narratives are personal stories of life-being-lived that can, for Malaysians, lay out the possibilities for shaping a truly Malaysian identity that includes all Malaysians.

Keywords: COVID-19, Malaysia, crisis, creative narratives, commonalities, route to recovery, nurturing space, catharsis

Introduction

In Malaysia, the SARS-Coronavirus-2 (COVID-19) infection descended as the other side of a sharp two-edged sword. Awakening to the reality of its arrival in our own backyard, we were hit in the stomach with a political coup. Just three weeks later, the only news that seemed to preoccupy the nation was related to updates on the doings of this pernicious bug. That and toilet paper.

COVID-19 stifled a strong collective response from the *rakyat* (Malay for 'people' or 'citizens') to the political crisis. It prevented the kind of organised response that in 2018 had made it possible for this multi-ethnic nation to finally begin a narrative of true inclusivity.

To be sure, the *rakyat* did rise up to protest the rubbishing of their rights. Unfortunately, the emerging health crisis quickly put a stop to any show of people power. So, while at least three gatherings were held in the capital city of Kuala Lumpur immediately after the coup, they lacked the power and impact of the mass gatherings and street rallies that had helped push the toppled government into power two years before (Bhattacharjee, 2020, February 24; Nurul, 2020, February 25; Choong, 2020, February 26; Ng, 2020, March 1, "Protesters rally in central KL over 'backdoor' government"). Attendance was dismal.

COVID-19 was likely a main reason for the low attendance. This disease spreads fast, acting as an anti-social force that separates people in an Orwellian way. Based on media reports, the disease was indeed a concern among Malaysians by January 2020 (Hana, et al., 2020, January 31). In fact, researchers Jamari and Chia (2020, February 19) wrote that panic buying had been triggered in Malaysia "[q]uite early into the pandemic", but in a "subtle" way, that is, without documentation in the mainstream and social media. Being already armed with knowledge and awareness, then, it is likely that Malaysians were cautious about taking part in large, uncontrolled gatherings at the time.

The voice of the *rakyat* was also heard through opinion pieces in the mainstream media (Azly, 2020, February 24; Tan, 2020, February 24, "Malaysia's biggest betrayal in history: What's next?"; Kukreja, 2020, February 25; Tan, 2020, February 25, "The backdoor boys' betrayal: Parliament deserves better"; De Cruz, 2020, February 28). Social media and the Internet, too, carried the voice of the people. However, support for the 'backdoor boys' was also strong (Ng, 2020, March 1,

"#NotMyPM trends on Malaysia's Twitter, while others voice support for new PM Muhyiddin"). By no means did the outrage expressed by individuals in cyber space grow into a protest movement, unlike in 2018. Soon, mainstream media turned their focus to the health crisis, and the *rakyat* lost their avenue for the shaping of a collective narrative of the political crisis. The mainstream media, were, however, at the disposal of the new government. The government, not yet legitimised by Parliament, was free to strengthen its hold on power, which it did.

In the one week of political high drama featuring Malaysian politicians, royalty, the Press and royalty-sponsored fast food when Malaysia was without a government, there was hope that someone, somehow would do something to steer the ship back into calmer waters. However, when on the last day of February one of the main hands in the coup was announced as the new Prime Minister, that hope crumbled. Fatigue, disgust and resignation replaced it.

The *rakyat* had invested too much of themselves into the 2018 movement to bring a new government to power. Now the pre-2018 pack were back. The *rakyat's* will to respond seemed weak in the face of a severe health crisis that distanced people from one another and restricted their movement at a time when solidarity and action were needed. Coping with the fallout would have to be a private matter.

Then, COVID-19 moved to center-stage.

How COVID-19 Displaced Malaysia's Political Crisis

Leaders with No Narrative?

Leaders of the former government had one crucial week when they might have turned things around. True, there were just too many twists and turns. Finally, it was down to who actually had the majority to lead in Parliament. Both sides were busy that week counting and recounting their numbers as several Members of Parliament scampered to where the power had shifted. It was a bizarre scenario. Democracy had been pared down to its most basic requirement, a head count. Integrity was just another foreign word.

At the same time, the deep conflict between the component parties of the former ruling coalition was finally out in the open. Dislike, disrespect and distrust for one another were on display for everyone to see. It was deeply disheartening to witness for Malaysians who had believed the narrative of hope and inclusivity broadly dispersed in 2018.

In fact, rumbling in the media about the very real possibility of a political earthquake had begun almost as soon as the former government came to power. It peaked in the latter half of 2019. In October 2019, the topic of a 'backdoor government' toppling the duly elected government received extensive coverage in the mainstream media ("Desperate parties trying to form back-door government, says Azmin", 2019, October 22; "No such thing as backdoor govt in Melaka, says chief minister", 2019, October 25; "Melaka CM: State is focused on the people, not change of govt talk", 2019, October 26; "No discussions to form back door govt with Umno, says Melaka PPBM", 2020, October 27; Amar, 2019, October 28; Tee, 2019, October 29). Although sources in these reports denied that a collapse of the government was imminent, in local politics, denials can signal that what is being denied is true. On January 9, 2020 an online news article boldly claimed that the ruling coalition was likely to see a drastic change before May 2020 ("DAP may be out of the government soon", 2020, January 9). Just one week before the coup, an article in the mainstream media mooted several what-if scenarios that could change the political landscape of Malaysia suddenly and drastically (Golingai, 2020, February 16).

It is hard to imagine that the people who were actually running the government at the time did not know what journalists seemed to know. Yet, there had been no back-up plan for dealing with the eventuality of a backdoor government coming to power. When it did happen, the ousted leaders could not manage even a narrative that in that crucial week could have consolidated and directed people power to bring back the people's government. The only 'narrative' coming from their camp was fragmented noise, feeding off a sense of personal betrayal, finger pointing and oft-repeated key words like 'betrayed', 'traitors', 'backdoor government' and 'high moral ground' ("Anwar meets DAP, *Amanah* leaders after claiming betrayal by coalition partners", 2020, February 24; "I feel betrayed by Muhyiddin, says Dr M", 2020, March 1). The *rakyat*, the ones actually betrayed, although in deep shock, at least seemed to have a narrative. It is perhaps best captured by a comment made in one opinion piece: "What a bunch of losers we voted into power . . . two years ago" (Azly, 2020, February 24). It was clear that the coalition would never have been able to work out their differences and a government collapse had been inevitable.

COVID-19 and the New Normal for Democracy in Malaysia

When the disease escalated to pandemic level, there was no longer a need for a political narrative by anyone. COVID-19 was directing the power narrative in Malaysia. While individual blogs and social media did bring up the power grab, the mainstream media became strangely muted on the topic. They reported news of sackings, resignations and new appointments in the government. They carried opinion pieces on the coup, but seemed largely unwilling to fuel a narrative that would be counter-productive at a time when unity and focus were necessary. Leaders of the hijacked former government recognised this too and kept the peace. The disease was now terrorising the entire world. Everyone had to focus on fighting the virus. Perhaps this simple principle will have taught the previous ruling coalition the value of unity.

COVID-19 also allowed the new Prime Minister to move fast. The new Opposition were clamouring for an urgent sitting of Parliament to determine the actual head-count of both sides (Arfa & Tharanya, 2020, March 1). Partial lockdown was enforced under the Movement Control Order (MCO) on March 18. Parliament was postponed for two months. However, in April, the promised 15-day sitting was reduced to only one day "in line with the Movement Control Order (MCO)" ("Parliament to convene on May 18 for only one day", 2020, April 17). After the Speaker of the House on May 8 allowed a no-confidence motion against the Prime Minister to be introduced at the sitting, it was announced on May 13 that the session would be further truncated to a half-day episode of listening to the King's address. The reason was that "the spread of COVID-19 ha[d] not fully abated" (Amir, 2020, May 13). So, on May 18, there were no debates. Parliament will only meet again in July. No explanation has been given as to why most businesses have been allowed to resume operation since May 4 but Parliament, under tight control conditions, cannot meet. Meanwhile, the delay allowed more Members of Parliament to cross over to the new government. It is rumoured that more will do so ("Another PKR MP to quit party", 2020, May 22).

The Action of Crisis on Social Systems and Individuals

Seeger and Sellnow (2016) presented crisis as an extreme, disruptive event leading to a negative conclusion but not always so. MacDonald (2016) averred that crisis presents both danger and opportunity. Crises are extreme threats to existing social structures that require radical measures to dismantle the attendant threat for a return to order. Malaysia's Movement Control Order (MCO), implemented on March 18, is one such measure. Generally, Malaysians recognise the need for the radical move, which is not at all drastic compared, for instance, with India's lockdown (Roy, 2020). Nevertheless, it has been a struggle for many ("Minister: Cops to drag", 2020).

Because of the extreme threat and the resultant fear it induces in people experiencing it, crisis leads to trauma. Research into coping strategies employed in perceived low-control situations suggests that people approach life believing they have control over constructs that affect them directly. When something abruptly rocks that perception, in this case a political and immediately after, a health crisis, their immediate response is to re-establish perceived control through "compensatory strategies" (p. 1) that provide structure in times of uncertainty. The panic buying and hoarding triggered by the announcement of the Movement Control Order (MCO) in Malaysia are examples of such coping strategies. People were resorting to compensatory behaviours to cope with anxiety induced by the health crisis (Otis, 2020; "Panic buying hits Penang", 2020; Chen et al., 2016).

While this is taking place, Seeger and Sellnow (2016) proposed, "a narrative space" for explanation and meaning is created that will be filled with narratives about the crisis from different sources. These 'crisis narratives', with or without an agenda to shape power narratives, attempt to provide explanation and meaning at a time of threat, and are sought out as intervention strategies (Ragan, 2016). The aim is to regain control over the presenting chaos and confusion.

In the case of Malaysia, deep conflict within the former ruling coalition gave the former Opposition the opportunity to launch a successful attack. In the chaos that followed the coup, neither the *rakyat* nor the ousted group could offer a strong collective narrative. The chaos was opportunity for the former Opposition to craft a crisis narrative that won them power and then strengthened their hold on it. The need to defeat a malevolent virus called for unity. Extreme measures like social distancing and partial lockdown were necessary. These measures then became convenient reasons to postpone Parliament twice and block a no-confidence vote. Meanwhile, the new government had access to the mainstream media, and could focus the nation's attention on its efforts to mitigate the effects of the health crisis. The will to direct the power narrative through control of the mainstream media was seen most clearly when only government news agencies were allowed to cover the King's address

to Parliament on May 18 on grounds that crowding was to be avoided. The counter narrative to this from the Opposition is that the new Prime Minister is too scared to face a no-confidence vote in Parliament because he does not have the numbers ("Mahathir slams Malaysian gov't for shortened Parliament meet", 2020, May 18) and will contrive to fix this by inducing more Members of Parliament to cross over to his camp.

Re-Establishing Voice Through Creative Narratives

The chaos created by the twin crises, however, may hold larger opportunity for Malaysia. Freedom of speech in Malaysia is mediated by the need to accommodate the constructs of race and religion. This is a multi-ethnic society still thrashing out a common identity. Malaysians enjoy freedom to share thoughts and opinions, unlike in some countries, but there are socio-political issues that if broached must be done with wisdom and discretion. Perhaps what cannot be voiced out in words may be done through creative narratives.

Creative narratives are stories of personal lives lived and being lived told through written texts, speech acts and a myriad of creative events ranging from grand and sophisticated forms such as theatre, song and music to the most simple and basic personal sharing of life-being-lived that technology has made possible. Everyone is the protagonist of their own life-story, and today, everyone is able to capture, record and share that unique story as part of the larger narrative of life. Creative narratives are freely available on the Internet today.

Chaos caused by Malaysia's twin crises has given Malaysians a lot of time for reflection. It has been possible to revisit the events of the past two years and national history as a whole, too. The Malaysians who entered isolation on March 18 are likely to emerge on June 9, if there are no more extensions to the Movement Control Order, changed in perspective about many things, especially those that matter the most in life. It will be interesting to see how and what the *rakyat* will choose hereon.

Narratives in Time of Crisis

The power of narratives, especially creative narratives that tap into deeper areas of the mind often unreachable to cognition, lies in this empowerment of the individual who shares a personal story of crisis and recovery. Medicine itself, the major front-liner in the COVID-19 health crisis, uses narratives as part and parcel of the doctor's craft. Without the narrative provided by history-taking, diagnosis and cure cannot be formulated. Aeman, Hena, Natasha and Asad (2017) showed that in medicine, narratives provide stability because space has been given for active reflection leading to catharsis.

Wang and Geale acknowledged that narratives "[amplify] voices that may have otherwise remained silent" (2015, p. 195). Through cathartic story-telling, narratives present specific experience to the public that can "heal and soothe" and bring "hope and courage" to "explore and grow" as well as encourage "dialogue and reflection" that is "intertwined and cyclical" (p. 198).

This is necessary for Malaysia. Malaysians deserve a new story. The old one is toxic at its worst and boring at its mildest. Hope is not attached to political parties or movements but in the will of people to bring to realisation what they instinctively recognise to be good, and goodness is spilling over in the diversity that is Malaysia. That goodness needs to be harnessed to tell new stories about Malaysia.

A Failed Narrative

In the 2018 election, the Malaysian voice spoke up loudly for new direction for the nation through clean governance and inclusivity. Unfortunately, all there was at the time to manage the shaping of that direction was a coalition whose fissures had been veiled by an immense sense of oneness of purpose that everyone chose to interpret as unity. The grandness of the scheme of crafting a truly Malaysian identity was worth the attempt. It failed.

Perhaps it is now time for Malaysia to consider possibilities beyond what is currently on offer. Old politics and politicians should perhaps go into isolation while younger Malaysians who are willing to look beyond the old constructs of race and religion and who have the creativity to do it in positive, inclusive ways should lead in crafting a power narrative for Malaysia based on the national dynamics of today. The old filters of pre-Independence are no longer useable in the year 2020, the year of 'perfect vision'. It is time to try new routes to nurturing unity.

Whispered Narratives: A New Voice Breaking

The *rakyat* filled the long challenging days of being stuck at home during the Movement Control Order (MCO) with many examples of how to craft a new direction for Malaysia through creative narratives. Two striking examples of the

power of creative narratives to shape opportunities for inclusivity in Malaysia are considered here.

A home-made video was posted on Youtube of a portion of one of the new Prime Minister's addresses to the nation. It had been reworked to the beat of hip-hop music, and presented a man in typical Malaysian at-home garb dancing to the catchy, upbeat music in his home (*Lagu rap*, 2020, "*Ke Sana, Ke Sini*"). It was an instant hit with Malaysians. It bypassed politics, race and religion, and simply rode on positive energy during an oppressive time. It effectively brought together technology, creative energy and expression, comedic appeal and a keen appreciation for opportunity. Malaysians were delighted! Dressing in the recognisably Malaysian *sarung* (long skirt wrapped around the waist, worn by men and women), the favourite casual wear of many Malaysians of all ages, was a stroke of genius. It captured the *rakyat's* shared identity and at the same time commented on the shared sense of resignation to being stuck at home indefinitely. It demonstrated the transformative power of creativity: restriction converted to hope and energy.

That infectious video inspired other Malaysians to post their own versions of the dance, thereby beginning on a positive note a discourse on what Malaysian-ness might look like post-crisis. The difficulties awaiting Malaysia and the rest of the world will need communities to work together. For that, people will need to look for commonalities, no matter how long social distancing is going to be a feature of life post-COVID-19. This particular creative narrative united Malaysians and possibly even eroded some of the resentment towards the new Prime Minister, who had been a key player in bringing down the 'people's government'.

The second example was the cooking shows produced by a young Indian Malaysian woman. S. Pavithra's no-frill videos as a very new Youtuber turned her into a Malaysian celebrity during the Movement Control Order, although her intention had simply been to earn an extra income for her family. Her videos showed how to cook Indian dishes familiar to Malaysians. Subscribers took to her simplicity, sincerity and humility. Many praised her for using affordable and easily available ingredients, keeping her recipes and methods simple and speaking in the national language.

The last point enabled all Malaysians to reproduce her simple but tasty dishes. Unfortunately, several viewers saw this unity-building strength as weakness, and objected to her use of the national language, stating that it made Indian Malaysian cooking accessible to other Malaysians. Loyal subscribers of all races quickly defended her and denounced the small-mindedness of her critics. The new Prime Minister again struck the right note with the *rakyat* when he sent her a set of cooking utensils, a tripod and foodstuff to acknowledge her initiative and to encourage her to continue. She has probably won more subscribers now, as also perhaps the new Prime Minister. Hopefully, her critics will now be schooled on the benefits of inclusivity. Even better, that attitude like theirs is what leads to the collapse of elected governments.

Seeger and Sellnow (2016) argued that crises can be powerful agents of social change. Perhaps this is the reset that the twin crises of 2020 will switch on, while the old rantings of race and religion are switched off in Malaysian genes. As Malaysians encode their personal story in the nurturing space of creative narratives, this can be the new outbreak of hope.

Conclusion

The act of producing narratives, especially creative narratives, can have much cathartic benefit (Aeman, Hena, Natasha, & Asad, 2017; Wang & Geale, 2015) as it requires the subjects to draw on creativity as well as employ cognitive skills to shape thoughts through the process of ordering and sequencing. Such an opportunity allows them to regain a sense of control in the face of a low-control situation such as a crisis (Yap & Chen, 2020; Chen et al., 2017; Seeger & Selnow, 2016; Landau et al., 2015). For Malaysians, the crisis was two-fold as COVID-19 hit at about the same time as a political coup that brought down the government.

Narratives are a precious nurturing space for shared experience, and post-crisis Malaysia is going to require commonalities as a basis for the huge mission of rebuilding the nation. Creative narratives that weave together the Malaysian story will capture thread by thread the variance present in the genetics of Malaysian diversity and present new routes to rebuilding the nation based on a truly Malaysian identity. Such a tapestry of possibilities can enrich not just this nation, but the rest of Southeast Asia as well, the world even.

Competing Interest Statement

The author has read and approved the manuscript and takes full responsibility for the contents. The author has declared that no competing interest exists.

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Crescentia graduated from Universiti Malaya with a Bachelor of Arts (First Class Hons) in English Literature in 1992 and a Master of Arts, also in English Literature, in 1999. She served a scholarship bond with the New Straits Times as a journalist after receiving her first degree, and then returned to Universiti Malaya to enrol in the MA programme. She obtained her MA in 1999 upon submission of a thesis entitled 'The Jew in America: The Dialogue of Becoming in the Fiction of Abraham Cahan'.

In order to learn more about the world, she chose to work with Pearson Longman Malaysia rather than continue life as an academic. She stayed with Pearson for seven years, rising from Editor to Senior Editor to Commissioning Editor. She took a break of a year and half to try her hand at freelance writing, during which time she also taught English in an orphanage in Cambodia for three and a half months. She joined full-time teaching with Taylor's University in 2008 as a lecturer in English with the School of Hospitality and Culinary Arts. In 2011, she moved to the International Medical University in Bukit Jalil, where she taught Academic English and humanities subjects to medical, dentistry, nursing, pharmacy and health science students.

Crescentia's greatest passion is putting words together to arrive at meaning. Meaning has been her highest goal from childhood, long before she realised it was her pursuit. She delights in writing short stories and poetry. She also enjoys academic writing. Her area of interest is healing narratives.

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CONCEPT PAPER

The Face of Education and the Faceless Teacher Post COVID-19

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ABSTRACT

With the outbreak of COVID-19, strong winds of change have blown into all spheres and strata of global society. On the education front, a forcible shift in the medium of teaching and learning is inevitable. The stark reality in the face has prompted urgent and immediate change (willing and unwilling) in the way lessons are delivered. Post COVID-19 period is projected to place greater emphasis on virtual learning (the faceless teacher), in which the role of the teacher and learners will significantly transform. This paper forecasts six ways post COVID-19 era will evolve education more than ever, with the faceless teacher becoming the new normal. Further, challenges confronting institutional heads, educators and students are put forth in view of the various forms of transformation likely to unfold in the months and years to come, where the teaching and learning landscape will acclimatise to the domination of a virtual medium.

Keywords: education, faceless teacher, online learning, post COVID-19, remote learning, virtual learning.

Introduction

Within merely 100 days, since the fateful date of December 31, 2019, when the first case of novel coronavirus disease (COVID-19) was reported to the World Health Organisation (WHO) by China Country Office (WHO, 2019), the menacing pandemic has engulfed every sphere of human existence. We are now living in unprecedented times, the likes of which have not been seen since the end of World War 2. The hard hitting reality is that every sector of the economy has been punctured by this worldwide public health emergency (Lederer, 2020). Between January 1 to April 1, 2020, a staggering 874,081 cases of COVID-19 were recorded worldwide, with the virus hampering human lives in 180 countries (Linnane, 2020). The statistics have since multiplied drastically, wherein less than two months, as at 22 May 2020, there were a whopping 5, 246,347 COVID-19 positive cases, taking 336,215 precious lives all over the world (worldometer, 2020). With the virus now dictating our life in every possible sphere, change is inevitable, even mandatory, as businesses and consumers alike have had to make difficult decisions to adapt and embrace change in the way service offerings are made available to the market where social distancing is at the forefront, underpinning every transaction and encounter.

Like every other sector, the education landscape has been wholly impacted in all nations and at all levels of academic institutions, as ingenuity of educators has been forcibly stretched as a coping mechanism in the face of crisis. Up to March 31, 2020, the impact of COVID-19 has been so enormous, resulting in over 1.5 billion learners getting displaced out of academic institutions worldwide, as the continents of Africa, Europe and Asia experienced full closure of schools and universities, while countries like the United States of America, Brazil and Australia enforced localised closure of their educational institutions (UNESCO, 2020a). In Malaysia, eight million students have been affected due to school closures (Azahar, 2020). Many hope the pandemic will subside and ease out, where routine daily tasks will resume and normalise post-quarantine. Although some countries have begun to loosen up their lockdown restrictions, recent report by WHO has firmly warned humanity that COVID-19 may never go away, and that

we would just have to learn to cope and live with it (New Straits Times, 2020). With this dismal scenario hovering and looming over us, it seems almost certain that the face of education may not normalise for a long time to come. Regardless of the timeline to curb or control the spread of the virus, one thing remains certain - the face of education is bound to undergo a seismic shift. In view of this inevitable change, this paper serves to explore the dynamics of education which will transform the way teaching and learning is carried out henceforth. The arguments and foreseeable changes suggested by the authors are both theoretical and practical (managerial), based on review of literature on the topic and currently transpiring evidence-based updates. The discussion encompasses six broad areas which are set to change the face of education in the 21st century, both for short-term and in the long run, together with ensuing implications of these changes. It is imperative that educators be ready to embrace the new normal of faceless teaching in the face of this pandemic.

Literature Review

Incorporation of Technology in the Past

Before delving into the highly anticipated transformations in future, a cursory look at how teaching and learning is primarily conducted pre COVID-19 is pertinent. There has been a gradual increase in the adoption of technological tools in classrooms around the world in an attempt to support and gradually realise the virtual classroom construct. Several models of supplementary online pedagogy have been adopted under the umbrella of blended learning (Horn & Staker, 2014), namely rotation model, enriched virtual classroom, ala carte, and flex virtual classroom. In carrying out a meta analysis on 142 studies on blended learning, Nora Listiana and Jaharadak (2019, p. 4–6) classify the various topics of blended learning research into six broad characteristics or categories, namely, motivation (Vanslambrouck, Zhu, Lombaerts, Philipsen, & Tondeur, 2016; Zainuddin, 2018, as cited in Nor Listiana & Jaharadak, 2019, p. 4), satisfaction (Alshehri, 2017; Rahman, Hussein, & Aluwi, 2015, as cited in Nor Listiana & Jaharadak, 2019, p. 4) effectiveness (Compe`re, 2017; Lau, et al., 2018, as cited in Nor Listiana & Jaharadak , 2019, p. 5). interaction (Plekhanova & Prohorets, 2015; Shu & Gu, 2018, as cited in Nor Listiana & Jaharadak, 2019, p. 5), communication (Boelens De Wever, & Voet, 2017; Shorey, Kowitlawakul, Devi, Chen, Soong, & Ang, 2018, as cited in Nor Listiana & Jaharadak, 2019, p. 5) and challenges (Kaur, 2013; Lau, et al., 2018, as cited in Nor Listiana & Jaharadak, 2019, p. 6).

However, the age-old teaching approach of instructivism has been applied throughout the years and decades, where lessons are instructor-centred and students learn based on a structured schedule in a synchronous or asynchronous online classroom. Fadini and Finardi (2015) describe the interaction and communication on the Internet to be possible due to the availability of synchronous or asynchronous resources, anytime, anywhere, in many forms, and with unlimited participation.

Some of the tools introduced in academic institutions include virtual reality (VR), cloud computing, learning management systems (LMS) and social media which slowly gave classrooms a new look and breathed new life into lessons. VR allows students to learn by interacting with a 3D world while cloud computing enables the upload of educational resources on a school's cloud terminal, thus allowing students access anytime and anywhere (The AME Group, n. d.). While all these platforms may be contended to be of a lot of benefit, they served mainly as supplementary and complementary teaching and learning tools, while the teacher/instructor variable remained fundamental in the entire pre COVID-19 process of education and classroom learning. As Szabo (2019) contends, "multiple studies have shown that the relationship between human teacher and student is a major driver of the motivation that drives the learning process" (p. 19), for example, Zhao, et a. (2005), as cited in Szabo, 2019).

Technology in education has also been almost exclusively reserved for schools and institutions with privileged students who can afford the purchase of advanced tools. Investments in technology has been made, albeit with a dose of caution and hesitance on the part of school administration in making a sizeable investment in technology as there is skepticism as to how much more effective classroom lessons will be with them. In status quo, online presence in classrooms is limited, often in a supplementary role and is only ever applied by educators if necessary, such as to meet requirements/KPIs set by administration.

Visceral Response to Virtual Learning by Educators and Students

Within days of being termed a pandemic by the WHO (Ducharme, 2020), academic institutions were temporarily closed in an attempt to limit close physical contact and this led to further uncertainty as to how classes and examinations would be conducted. The familiar routine of teachers and students was given an awkward jolt, resulting in their flocking to various forms of online

learning platforms and instant messaging apps (Menon, 2020), mass migration, as it were. Open and distance learning (ODL), virtual learning and remote teaching became the instant talk of town and the new normal in the world of academia, consequently exerting heightened mental and psychological anxiety on both educators and their clients, the students. The visceral response was of resistance by both groups, (arguably more by teachers), to the full adoption of technological tools to facilitate classroom teaching, lectures and tutorials. This has been particularly difficult for baby boomer generation of educators that have long adopted the chalk and talk teaching method, thus, any mention of utilising full technology in carrying out classes seemed unfamiliar, almost unfathomable to some.

Lack of information literacy (IL) or digital literacy is another source among a certain subset of instructors (Saunders, 2012), and some students (Lokesha & Adithya, 2019; Manthiramoorthi, Saravanakumar, & Thirumagal, 2019, as cited in Neogi & Partap, 2019), hence, may be unconvinced of the efficacy of virtual classrooms. Teachers resist the inconvenience of delivering lessons and navigating the Internet by adjusting to the technicalities of conducting classes mediated by a screen and a microphone (Iwai, 2020). For so long, teachers have always been at the forefront in leading a classroom lesson (Wright, 2013), but with the spread of COVID-19, national lockdowns (partial and full) suddenly made face-to-face learning a thing of the past, non-relatable, irrelevant and no longer viable. Without physical proximity with students, teachers now struggle to re-establish their role from a primary input provider to a facilitator of learning - no longer a wooly idea in the clouds, but a stark reality to embrace for all. Additionally, mental block among teachers in accepting this new reality is realistically real, possibly alluded to lack of interest in exploring technology, deemed to be troublesome and time-consuming. Having established their comfort zone, many do not want to rock the boat drastically, as opposed to students, often millennials or Generation Z individuals, who willingly welcome implementation of technology sooner (Fisher, 2018).

From the students' perspective, though they seemingly display readiness for virtual learning (see Hung, Chou, Chen, & Own, 2010), concerns of their own are equally grave. The notion of attending classes through videoconferencing and completing assignments remotely without physical guidance of teachers also did not initially appeal to students (Goldstein, Popescu, Hannah-Jones, 2020) who often lack the discipline and autonomous learning skills (see Kaur, 2017; Kaur, 2013) to effectively manage their study plan. Owing to inevitable shutdown of educational institutions and the fluid nature of virtual learning, a substantial amount of responsibility has now been shifted to students in planning, monitoring and evaluating their studies and syllabus content in the medium of a faceless teacher. This shift has placed students in uncharted waters, especially those who continuously shun autonomous and self-directed learning; technological competence have to be brushed up and time management skills are of utmost importance in facilitating fruitful virtual classroom lessons. Proponents of virtual learning like Vaccani, Javidnia and Humphrey-Murto (2014) have posited that webcast lectures are comparable to live lectures as a teaching tool, particularly in medical schools as students benefit immensely from the ability to re-watch lectures at their convenience. However, the reality of the situation is that some subjects, for example courses in the Creative Arts discipline such as music, dance and creative writing are much more challenging to transfer online as human-to-human interaction is essential in delivery of content. In virtual learning, the screen creates a divide that makes it challenging to have back-and-forth dialogue between educators and students, as well as making it difficult to provide thoughtful feedback tailored to the needs of each student (Iwai, 2020). The only question that remains: are we ready to accept change? As change is imminent, change we must, we must change, must we change? Indeed, we must, as resilience is the name of the game. The discussion that ensues is based on literature on teaching and learning in the past (pre COVID-19), and how the pandemic has and will throw educators into the throes of a faceless teaching and learning environment of the future (post COVID-19). The foreseeable changes and transformation postulate the impact of the pandemic will exert on education, both at global and local scenes.

Foreseeable Changes in Education Post-COVID-19

In the aftermath of this disease, the world of academia is poised to see significant forms of transformation and innovations at all levels of education. While most of these changes might have been involuntary initially as a direct response to the shutdown of institutions, it is postulated that the world is bound to witness a cascading fundamental shift in the manner in which teaching and learning is conducted (Luthra & Mackenzie, 2020). How will the face of education look like in the immediate, and foreseeable future? Given the advancements we have seen thus far, the following are developments in education that are reasonably certain as the world bounces back post-COVID-19.

Virtual Learning as a Predominant Force in Teaching and Learning

When the (COVID-19) dust (eventually) settles, the Internet and virtual learning may invariably become the predominant force in delivery of syllabus content. Weeks and months of constant indoctrination of social distancing, avoidance of handshakes, hugs, social events will linger on in the hearts and minds of the populace, living in the new reality, with a degree of fear and skepticism at the back of every mind, of another wave or a relapse of the virus. As cautioned by Dr. Anthony Fauci, the director of the American National Institute of Allergy and Infectious Diseases, "we will gradually come back to where we can function as a society again, but, even with a vaccine, the virus will be a looming threat" (DeMarche, 2020, para. 2). Hence, for a good period of time, it is predicted and contended that virtual or remote learning will occupy a big fraction of the pedagogical enterprise, while open and distance learning (ODL) courses will become more appealing to the masses. Once the COVID-19 pandemic scare settles, virtual learning and the integration of the Internet in learning and teaching should become the norm in most institutions worldwide. Even in the early stages of the pandemic, educational institutions quickly responded by adapting as needed, notably in February 2020, where students in Hong Kong started to learn from home through interactive apps while 120 million students in China had access to learning materials via live television broadcasts (Tam & El-Azar, 2020). Moving forward, teachers are likely to resort to videoconferencing through applications such as Microsoft Teams, Google Hangouts, Google Meet, Webex and Zoom that foster the ability to work and socialise almost seamlessly. For example, Google offers a comprehensive ecosystem whereby teachers can carry out a video conference call through Google Hangouts or Google Meet, upload reading materials and assignments on Google Classroom, track attendance through Google Forms, schedule online classes on Google Calendar and have all these updated in the Gmail accounts of students, offering unmatched integration. Another benefit of videoconferencing is that students are able to record lessons for later review at a time and place convenient to them, thus truly embodying the idea of autonomous learning. Additionally, teachers and educators across different institutions will be allowed to cross-collaborate by virtually attending in-service teacher training courses, academic conferences and online education webinars through high-definition live streaming (Hutt, 2017). An increased presence of the Internet also promises a surge in social media usage in education as educators and learners can interact through Facebook groups, Facebook pages, Instagram accounts or YouTube channels maintained by teachers (Ahern, Feller, and Nagle, 2016), instead of the secondary role it plays in classrooms now, where physical books are the primary reference sources.

Role, Function and Expectation of Educators

COVID-19 is likely to throw educators into the throes of transformation of role, function and expectation. With or without technology, teachers will remain inherently indispensable (Wright, 2013), but will endure qualitative evolution in the education of a student. The long-standing role assigned to teachers has always been of an input provider and the primary source of information and reference (Kuehn, 2019; Luthra & Mackenzie, 2020). Understandably, the very notion of a teacher being the knowledge transmitter who solely prepares lesson plans and delivers them in class is no longer representative of the demands of 21st century education intertwined with technology (Luthra & Mackenzie, 2020). As students will gradually obtain greater access to knowledge, or even learn a technical skill, through a few clicks on their smartphone or tablets, the responsibility of the educator in classroom and lecture theatre warrants re-evaluation. In the digital age, where virtual lessons are likely to see a rise in educational institutions worldwide, students will find themselves remotely attending classes without having their teachers or peers physically nearby for quick reference or enquiry. This places a greater emphasis on educators to take up the role of a facilitator and effectively guide, monitor and motivate their students through a screen (Luthra & Mackenzie, 2020). As access to information would no longer be the primary concern, being able to keep them engaged, interested and invested in their education will be the next greatest challenge for teachers and instructors across the globe. As highlighted by Goldstein, Popescu, and Hannah-Jones (2020):

> Chronic absenteeism is a problem in American education during the best of times, but now, with the vast majority of the nation's school buildings closed and lessons being conducted remotely, more students than ever are missing class — not logging on, not checking in or not completing assignments (para.1).

Healthy student attendance to learning platforms requires teachers to invent and innovate teaching with a personal touch, with a sympathetic ear for the needs of students, hence, need to equip themselves with excellent interpersonal skills to best manage their entire class throughout the academic year. The integration of the 4Cs of 21st century learning (communication, collaboration,

critical thinking, creativity) cannot go unaccounted too, hence, effective means and avenues need to be sought to incorporate and embed these into teaching and learning.

Learners Shouldering Greater Responsibility in Learning

With virtual learning gaining prominence, especially after COVID-19, the learner's role in the learning process will become paramount, more than ever before. Hung, Chou, Chen, and Own (2010) found that students' levels of readiness were high in computer/Internet self-efficacy, motivation for learning, and online communication self-efficacy but were found to be low in learner control and self-directed learning. This will have to change as no matter how much effort the teacher puts in preparing the course materials, how many learning platforms are utilised and no matter how creatively the instruction is presented, it is not going to yield results without fundamental attitude shift among learners. Planning, monitoring and evaluating learning, making learning decisions and seeking out self-help measures to ensure autonomous learning behavior is vital, particularly so in asynchronous learning mode, where discipline and diligence are true testaments to a learner's commitment. As pointed out by Zimmerman (2002, as cited in Oates, 2019, Self-Regulated Learning section, para. 2), self-regulated learners are more inclined to succeed and will be more optimistic about their future, thus, highlighting the importance of lifelong learning. In the end, the teacher is a navigator who steers the boat but the energy that propels it must be provided by the learners. Whether learners from the different strata and dynamics can rise to the occasion to practise self-regulated learning in a virtual or in an open and distance learning environment, is to be seen.

The Restructuring of Teacher Preparation

With anticipation of transformation in the way teaching is carried out post COVID-19, the structure of pre-service teacher training will also change in tandem. Currently, there is already sufficient focus on equipping pre service teachers with adequate information technology (IT) skills to allow for a more interactive classroom ambience. For example, pre-service teachers in Malaysia undergo a well-structured teacher training course that incorporates the teaching of IT skills which subsequently leaves them prepared to integrate online media in their classrooms (Chan, Sidhu, Mohammad Shah & Abdul Aziz, 2011). Post-COVID-19, as the medium through which learners obtain knowledge moves to a predominantly digital sphere, the role expected of educators will move beyond IT savvy skills. Having a repertoire of pedagogical approaches will become irrelevant as teaching training programmes would need to (re) design courses to equip pre-service teachers with managerial and emotional skills to discern and address the emotional and psychological needs of learners in a glaringly faceless teaching and learning environment, where face-to-face interaction is largely reduced (diminished). For example, in the virtual platform of Trello application, individual student's progress can be monitored, but where and how the teacher needs to step in to provide feedback, and support or reinforcement in an emotionally uplifting way cannot be compromised, thus, a training mechanism for teachers to build on students' emotional well-being, alongside academic development is crucial.

Institutional Investment on Infrastructure

To what extent, type and how will institutions be spending their annual allocation/ budgets on infrastructure will also be a subject in focus in the not-so-distant future. Higher education institutions in the United States already face substantial financial pressure as university budgets have been steadily declining since the 2008 world financial crisis (Mitchell, Leachman, & Saenz, 2019). As institutions worldwide navigate around a weakened global economy shrouded with uncertainty, theoretically, this will likely impact decision-making in infrastructure investment as well. In status quo, learning institutions portion out a bigger percentage for face-to-face teaching while online medium complements face-to-face instruction, but this ratio may very likely flip moving forward in the 21st century post-COVID-19. Face-to-face interaction could possibly be limited to assessments and examinations that are still paper-based or project based, while syllabus content can be delivered online. This necessitates institutions making more calculated decisions in investing larger funds in supporting a digital infrastructure that can effectively facilitate virtual learning and online classrooms. This has been highlighted by Ibrahim (2020) that as an important revenue generator, higher education in Malaysia will invariably go digital, but will require greater government support to set up a strong digital infrastructure base. One significant aspect that would require investment is Learning Management System (LMS), with sufficient bandwidth, which represents a comprehensive software application that allows teachers to deliver syllabus content, track student progress and post assignment and examination grades. Examples of LMS applications include Blackboard, Moodle and Canvas that offer

learners the freedom to access content at their own pace, jot down notes online and keep them informed of pending tasks (Mansfield, 2019). The initial installation and subsequent ongoing maintenance on an LMS will require considerable investment and commitment from school and university administrations, that would have otherwise been allocated to physical amenities and infrastructure. With the rise of digitalised education, it is vital that funds be directed to worthwhile investments to help teachers and learners champion virtual learning.

Teacher-Student Ratio

Additionally, we can expect the teacher to student ratio to increase with higher technology adoption, especially at institutions of higher education. For example, the existing average nationwide teacher to student ratio in the United States stands at 1:16 (Public School Review, 2020) and this is bound to widen as more will be expected of teachers given the digitalisation of syllabus content and classrooms. An increase in class size and a proportionate increase in workload of teachers is likely once the online medium becomes the predominant teaching method, replacing the need for weekly lectures and tutorials. Directing a virtual class is an easier task for a teacher (Lederman, 2020) as opposed to managing a mortar-and-brick classroom that requires more time, effort and energy in delivering face-to-face lessons. Besides, research has shown that big student teacher ratio in a physical classroom is negatively correlated with student achievement (e.g., Koc & Çelik, 2015). If class size increases with the advent of technology in teaching and learning, most notably through LMSs, this would allow teachers to seamlessly monitor the learning development of each student through one integrated application. Will student achievements improve?

Implications of Changes to Education Post-COVID-19

While the abovementioned changes and transformations may loom over academia in the immediate months and years post COVID-19, challenges will confront both teachers and students alike in their quest to move forward and make up for the unquantifiable educational losses they have had to endure in the recent months.

Digital Divide and Inequity in Education

Fundamentally, inequity in accessing online education may profoundly widen the digital divide among students in developed and developing nations. According to Global 2020 Global Digital Overview report, only 60% of the world population is connected to the Internet, the majority of which hail from nations with advanced economies (Kemp, 2020). In Peru, for example, only 35% of teachers have access to a computer and the Internet while only 20% of households in South West Asia and sub-Saharan Africa have Internet connectivity at home (UNESCO, 2020b). This problem is non-exclusive to developing nations as approximately 15% of the US households with school going children do not enjoy the privilege of Internet access (Anderson & Perrin, 2018). This study argues that the divide is deeply rooted in income inequality, as students from lower income families are disproportionately affected by the transition to virtual learning that requires a technological device, Internet connection as well as a conducive learning environment at home. According to Reilly (2020), to cope, students would resort to frequenting public areas that offer free Wi-Fi connection, but connection of this sort is often spotty and makes it difficult to stream videos and high-graphic content. Failure to provide equitable Internet access to all teachers and students would represent a failure on the side of governments and a violation of the social contract. Beyond this, this uneven playing field is likely to further the deep-rooted socioeconomic inequality we see in many parts of the world today (Tam & El-Azar, 2020).

Education for Special Needs and At Risk Children

The shift to heightened reliance on online medium would have a negative impact on the learning development of special needs students and those who are academically weaker. While learning from home allows students flexibility (Vaccani, Javidnia & Humphrey-Murto, 2014), this also means that learning progress is almost solely reliant on students' own initiative and discipline. For many households, this places a great deal of stress on parents to constantly supervise, guide and keep track of their children to ensure they are focused on online lectures and honour their assignment deadlines (Reilly, 2020). For example, how do parents instil and monitor dyslexic or autistic children with skills of autonomous learning/ self-regulated learning behavior, whilst dealing with other daily commitments of their own, which is bound to compromise the quality of education children receive, if not properly guided. Likewise, for academically weaker students, learning through a screen may hamper their learning curve as their ability to quickly seek guidance and tips from teachers and classmates will be constrained, as compared to the more frequent personalised attention they were to receive in a physical classroom. Adapting to

the digital medium would require a great deal of investment on their end; failing to keep pace with syllabus content delivered online and failing to seek help immediately, would result in disinterestedness in their entire educational journey, further tarnishing future prospects.

Wholesome Educational Experience

In a broader sense, teachers and students worldwide will be challenged into buying the idea of online learning, mainly because social interaction with peers, the very essence in building a healthy and wholesome educational experience will be substantially robbed off students. Limiting face-to-face interactions could have detrimental impact on students' emotional development and emotional intelligence (Hurst, Wallace, & Nixon, 2013), consequently impacting growth of emotional quotient, inter-personal persona and soft skills. Wright (2013, para. 2) aptly describes that "teachers do not simply impart information and knowledge; teaching is not merely about systems, facts, figures and certainly does not exist to promote insularity and lack of social interaction." This is exceptionally pertinent in character building in young children, as schools are hubs of social activity in which students treasure the experience of learning in a classroom with their peers, in sync with the ideas of Aristotle, the great philosopher, who described man as a political animal with an innate desire to socialise, interact with, and learn from one another (Wright, 2013). Nevertheless, on a more positive perspective, in terms of critical thinking skills, Carmichael and Farrell (2012), argue that high-quality online resources are also capable in honing critical thinking skills among students, who will benefit from the ability to critically analyse reading materials at their own pace. However, nurturing and flourishing these skills through a largely virtual medium may be a tall order for many a teacher to fulfil.

Education Management Key Decisions

Moreover, the extent of the implementation of online learning in educational institutions is crucial in determining future acceptance of this new learning method. The forced closure of schools and universities as a result of the COVID-19 pandemic has presented an opportunity for disruptive innovation to take shape in the field of education. However, given that the pandemic spread so swiftly worldwide, this left institutions scrambling to move all courses fully online in a matter of days. Unfortunately, most schools and universities did not have in place a robust business continuity plan and lack the considerable resources needed to develop good online courses rapidly, hence, this will likely lead to adverse reactions from students and teachers alike to the poor transition to and implementation of online learning, consequently causing acceptance of virtual learning as lukewarm if the initial implementation is not executed satisfactorily (Lederman, 2020).

Conclusion

The COVID-19 pandemic has been a wholly transformative and landmark event in modern human history, as all sectors of the economy and human life have been affected by its repercussions. Dr Anthony Fauci grimly reminds that "if you want to get back to pre-coronavirus, that might not ever happen in the sense that the threat is there" (DeMarche, 2020, para. 3). With the impact experienced by the world of academia, we are invariably heading in the way of long-lasting changes (Luthra & Mackenzie, 2020) as a result of this watershed moment. This paper has explored six broad areas in which academic institutions, administrators, instructors and students will be impacted by the new normal, at all levels of education, be it k-12 or tertiary level. The paper has also discussed the four implications which will be resulted from the inevitable changes we are beginning to witness from this global pandemic. Moving forward, there will be an air of caution that will guide the actions of all humans as the fear of close human contact could linger on for an indefinite period of time. In this instance, it is critical to protect the well-being and mental health of everyone, including educators and learners. In embracing the new normal and the advancements in education that come with it, it is crucial that all institutional heads and decision-makers stay co-operated to ensure learning continuity, guided by principles of equity and inclusion for all. The rapid spread of COVID-19 has exhibited the significance of building resilience to face various threats, from pandemic disease to extremist violence to climate insecurity and even technological change (Tam & El-Azar, 2020). The pandemic is also an opportunity to remind ourselves of the skills institutional heads, educators, and students need in navigating this unpredictable world, namely informed decision-making, creative problem-solving and adaptability. Resilience to proactively adapt to change will keep educationists, educators, and the educated afloat, as exiting is not an option. Before we take the plunge and decide on the extent that virtual learning will drive the teaching and learning landscape of the future, it is imperative that we enquire and probe institutional and student readiness for digitalised learning. Empirical investigations of digital infrastructure, the development and learning support capacity of LMS,

redesigning of syllabus, assessment weightage and procedures, and class enrolments aligned with online and distance learning (ODL) / virtual learning need to be carried out in different regions of the world. With adequate data on readiness at different levels, we can forge ahead with effective and efficient digital learning post COVID-19, and redesign delivery of input with appropriate weightage on and balance between virtual and face-to-face instruction.

Competing Interests

The authors have declared that no competing interest exists.

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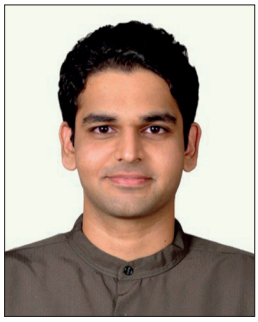

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CONCEPT PAPER

Time to Unite to Fight against COVID-19

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ABSTRACT

Coronavirus disease (COVID-19) has become a worldwide enemy. Its rapid spread with infected countries reaching 202 countries indicates that this virus needs special attention in its handling. Each country has a different policy in anticipating the widespread distribution of COVID-19. Indonesia is one of the countries which is too late to respond because it does not take the virus seriously. This paper explores the impact of this virus on the world of Education and the business world in a broad outline. Data collection with interviews and references from various trusted online sources. The conclusion from the results of this study is the need for personal awareness to change lifestyles with a healthy life, away from the crowd (social distancing), work, study and activities in the home, mutual understanding, and tolerance for the interests of society and the country. Besides, the world of education also plays an important role in anticipating the spread of viruses by implementing online learning and the limitations of facilities and infrastructure during online learning are expected to be acceptable to all parties both students, parents, and teachers. The government is also expected to provide relief in paying taxes for entrepreneurs affected by COVID-19 so as not to burden private entrepreneurs.

Keywords: COVID-19, Social distancing, the business world, the world of education, personal awareness.

Introduction

To provide accurate data for global health needs in COVID-19 emergencies, an online interactive dashboard is developed and hosted by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins (Dong et al, 2000). According to the data in this dashboard, of March 29, 2020, the spread of the Coronavirus disease (COVID-19) has expanded to include 202 affected countries (Coronavirus, 2020). there were 684,652 cases recorded with 32,113 deceased and 145,696 recovered (Wordometer, 2020). The spread of this virus cannot be underestimated because it can attack people regardless of country of origin, ethnicity, religion, position, educational background, age, and gender. The global response to setting up health systems throughout the world is very important (Remuzzi, 2020).

Indonesia is one of the countries which is slow in following up on the spread of the Coronavirus (Lidwina, 2020). Although Indonesia is not the country in Southeast Asia that was first infected with COVID-19, the growth of COVID-19 cases in Indonesia is among the fastest. Thailand was the first to announce the COVID-19 case on January 21, followed by Singapore and Vietnam three days later. Although it is the last ASEAN country to announce the coronavirus, within the first 12 days there have been 50 first cases. While Singapore takes 21 days, Malaysia 39 days, Philippines 43 days, Thailand 48 days, and Vietnam 52 days. Indonesia among other ASEAN countries ranks third with the highest number of cases after the Philippines and Thailand (wordometers). COVID-19 has also had a large impact in the field of Education and the economy. Therefore, this study presents a case example of the impact of COVID-19

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on Education and the economy, especially in Higher Education and, micro-economy and SME business.

Methodology

This research was conducted using the interview method and the literature review. This research takes a case study of the impact of COVID-19 in Higher Education and, micro and SME business. Data Researchers interviewed two private entrepreneurs engaged in services and computer sales. One of the entrepreneurs interviewed had more than 900 employees while the other entrepreneur had as many as 50 employees. The literature collected by researchers come from official Indonesian government data, wordometers, and The Center for Systems Science and Engineering (CSSE). Besides that, there are also references from various news in trusted media in Indonesia.

Results and Discussion

Coronavirus-positive patients in Indonesia on March 22, 2020, were 514 cases (Source Wordmeter) and on March 28, 2020, were 1,285 cases included in 1, 107 treated (actives cases), 64 recovered and 114 deceased (www.covid19.go.id). On March 30, 2020, the number of cases was 1,414 with 75 cases recovering and 122 deceased. It can be imagined within a week that there have been more than 500 cases added. The cases increase add up quickly on May 16, 2020 were 16,496 cases included in 1, 11,617 treated (actives cases), 3,803 recovered and 1,076 deceased (www.covid19.go.id). This cannot be taken lightly. Social distancing (maintaining social distance) and quarantine at home according to indications (for example in the case of Persons with Oversight) must be done.

As an educator in a private university teaching Mandarin, I first heard the news that the Coronavirus had spread to Indonesia through television on March 2, 2020. President Jokowi informed us that two people were affected by the Coronavirus in Indonesia. These two people contracted the Coronavirus after interacting with Japanese citizens who were positive for COVID-19 infection. At that time, I was still teaching face to face. The first thing that I thought about was student safety and when online learning took place for the sake of student safety.

On March 18, the state universities of the University of Indonesia, Depok, and Indonesia University of Education, Bandung conducted a lockdown on their campus. Students who live in dormitories and boarding houses around universities are asked to return home for their safety and security. The university leaders of the University of Indonesia also prohibits all lecturers, students, and education personnel from traveling abroad, including studying abroad for students who register student exchange programs. Faculty and study program leaders are asked to coordinate with partner universities abroad to seek the best possible solution to the administrative and academic consequences of this ban (Yandiputra, 2020).

At that time, the researcher was still waiting for instructions from the private university where research teach to issue an online learning policy. Students were still in college and some students used public transportation such as buses and online transportation. Students were still enthusiastic about going to college since they wanted to gain knowledge and they thought that learning a foreign language needed to be face to face with their instructors. One thing that I think about was students were interacting with many people on their way to college. They did not think about the risk of getting infected with the virus. They enjoyed it and said that they did not worry as long as their parents let them go to college.

Finally, the decision for online learning took effect starting March 19, 2020. The last time lectures were March 18, 2020, and there were still 80% of students attending face-to-face lectures. Their enthusiasm for college defeated their worries about the spread of the Coronavirus. This was a great relief for parents, students, and lecturers as well. Students continued to enjoy online lectures and were still passionate about interacting with lecturers through ZOOM media. Although the use of ZOOM is only limited to 40 minutes at each meeting, it does not prevent it from continuing to hold lectures online. Of course, there are more assignments in lectures, and the burden of teaching increases. All sudden changes are always at risk but everything is carried out with full awareness for everyone's safety.

Students who have to study in the laboratory to conduct experiments have problems in online lectures because they do not have laboratory facilities in their homes. Thus they cannot carry out lectures normally and their knowledge needs to be practiced with the existence of experiments. This also raises new problems in the world of education since Coronavirus is an enemy that comes unnoticed and everyone is not fully prepared to deal with it.

The impact caused by this virus in the world of education is also not something that can be resolved in a short time. Policies to work at home and teach online (WFH, work from home) has been adopted by university leaders

to avoid a wider spread of the virus. In this condition parents and students are also expected to support the policies taken by the leadership of higher education. It is expected that parents also understand this condition and universities will always provide the best service to their students under normal conditions. Everything the leader of the university does is to protect the safety of the teaching staff and students.

The risk of spreading the virus is greater than the risk of not conducting face-to-face lectures and working in the laboratory to complete college assignments. At present all learning outcomes, course outlines, and lecturing methods must be adjusted to the conditions. The role of the teaching staff to carry out discussions with students and adapt to the conditions and existing facilities is also very much needed.

Lecturers are expected to be able to help calm students by saying that all students' obligations to complete assignments can be adjusted to the existing conditions. Students will not be required to complete tasks that are beyond their capabilities due to limited facilities and infrastructure. All cannot go according to everyone's expectations but all is done to avoid greater risk. Therefore, all educational institutions need to invest large amounts in the future to prepare an online learning system that allows teachers to keep interacting with their students.

The participation of researchers in universities is also carried out by conducting research through monitoring and predicting the development of the spread of the coronavirus in Indonesia. Binus University has a research group that monitors the progress of the addition of COVID-19 cases and informs the development of this case to the public so that the community can be more alert and careful to avoid the area of COVID-19 distribution. Researchers at the Bandung Institute of Technology sent a list of medicines that could be used as alternatives as long as the COVID-19 antivirus was not yet provided by the Minister of Health. The joint researchers of Indonesia University of Indonesia and IPB University also recommended alternatives from the COVID-19 antivirus.

The economic impact of the spread of this virus is inevitable. Companies engaged in services, especially in services such as entertainment, travel agents, therapy, and so on are also very affected by this virus. One by one, entrepreneurs closed their businesses scattered in several malls in Jakarta and several other cities. This is due to government appeals to reduce crowds so that visitors at the mall are reduced and this makes shops at the mall one by one also closed.

The risks that must be borne by private employers to obey the government's appeal by laying off employees must also be accepted with a broad heart. One private company that I am familiar with namely the Nakamura franchise company engaged in therapy has laid off more than 900 employees but employees are still paid. Can you imagine how much risk is borne by private entrepreneurs in this condition as well? Besides, there is no exemption in paying taxes. Taxes must be paid even if there is no income. Solutions must be considered by each private entrepreneur to survive in the present for the benefit of employees and their families as well. All of these to avoid the spread of the virus, the government's call must be obeyed by all parties. The government should issue a policy that can also ease private entrepreneurs by exempting tax payments for those who have closed all their businesses due to the impact of the spread of this virus.

Conclusions

As long as we are healthy, all the things that are delayed can still be resolved. As long as we all want to help each other and understand each other by adhering to the implementation of social distancing to reduce the risk of Coronavirus transmission (COVID-19) then the researcher sure the conditions will improve. Let us all be aware of ourselves to obey and carry out the government's call for social distancing. It has been proven that isolation of cases and contact tracing is used to control outbreaks of infectious diseases, but it all depends on the response of the community (Hellewell *et al*, 2020). Let's think about the public interest and the interests of the country by implementing social distancing. There is no need to find fault with the government or blame anyone suspected of bringing the virus to Indonesia. Self-awareness to change the way to work, gather and live a healthy life is needed at this time.

Let us as lecturers continue to carry out our obligation to provide knowledge to students under these limited conditions. As lecturers, we also become a model for students to remain productive and carry out the process of teaching and learning wholeheartedly with all the limited conditions. As a lecturer, I also urge students to obey government appeals by moving away from crowded places and running them wholeheartedly. All problems will certainly pass as long as we have the belief that everyone has a role in fighting the common enemy, namely COVID-19.

The government needs to think of a policy to provide tax relief for entrepreneurs affected by COVID-19. Employers have tried to survive by continuing to provide salaries to

their employees as a form of responsibility. The government is also expected to ease the burden on entrepreneurs by eliminating income taxes during the WFH period. If employers do not give salaries to their employees, riots may occur because people need to buy basic food.

Competing Interests

The author has declared that no competing interest exists.

Acknowledgment

This research is a personal study of BINUS University's Chinese Literature lecturer as a form of participation and concern for the COVID-19 pandemic. This research is also a contribution to the Indonesian government to pay attention to many sectors in dealing with the socio-economic impacts caused by COVID-19.

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Suplementary Data

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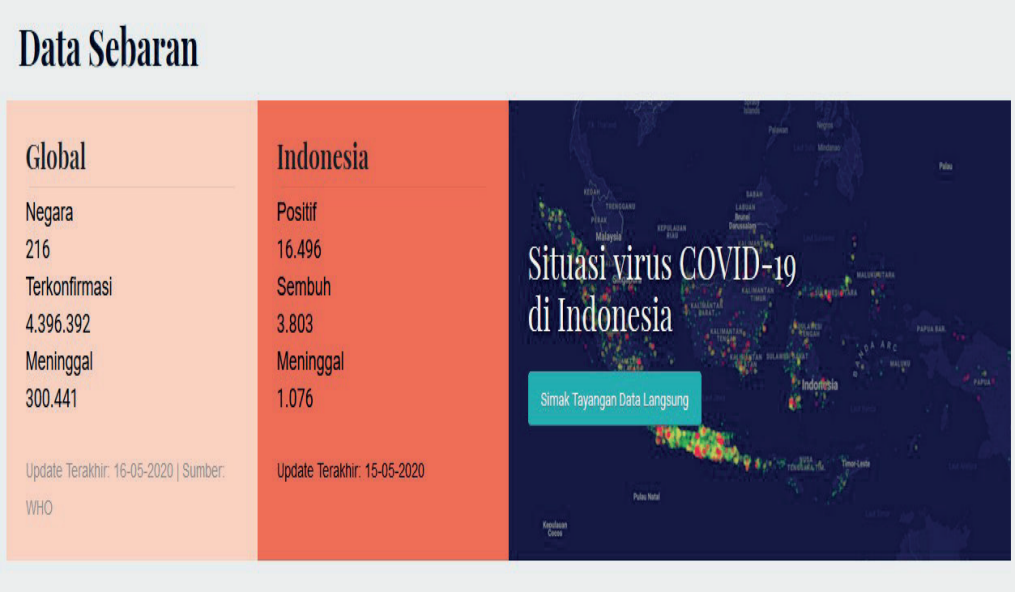

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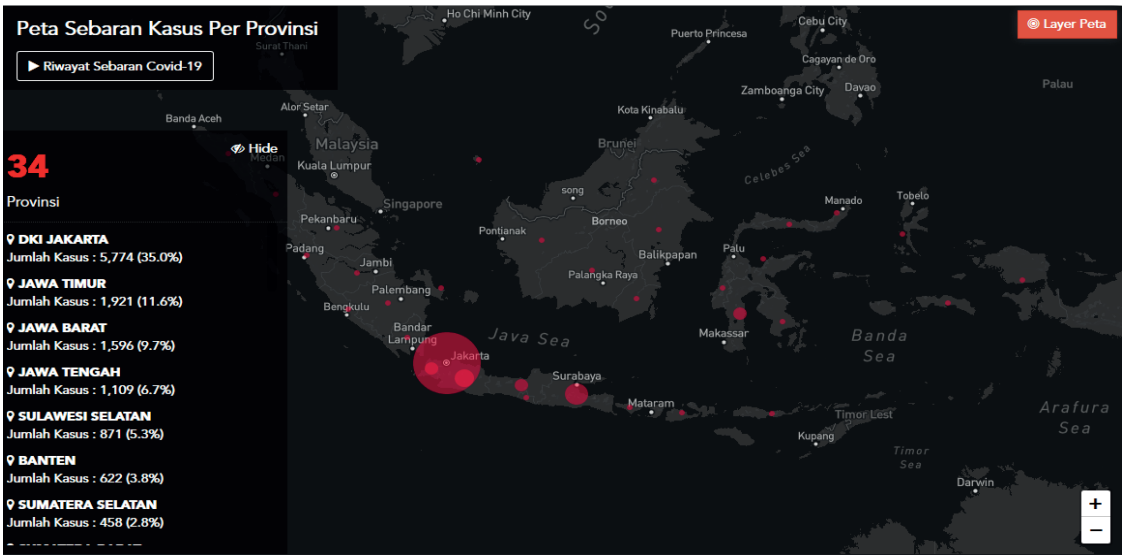

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CONCEPT PAPER

COVID-19 and its Impact– Science and Management

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ABSTRACT

Public and community health is get badly affected with the lack of control of COVID-19 pandemic. The novel Coronavirus disease 2019 (COVID-19) is caused by SARS-CoV-2, has created such a pandemic scenario where the infection has reached to millions and correspondingly the death toll. Many developed and developing countries proved that during the urgency of the situation. The system, staff, strategy, skills and facilities are weak enough to manage this public health crisis and incapable enough to control the risk of infection. COVID-19 has diffused worldwide so rapidly in comparison with SARS and MERS. This chapter on COVID-19 influence have discussed various information about the virus, current treatment options, drugs available, ongoing trials, recent diagnostics and probable vaccines for COVID-19 control. The paper suggests theoretical implications and provide recommendation to public health management.

Keywords: COVID-19, Severe Acute Respiratory Syndrome (SARS), Middle East Respiratory Syndrome (MERS), Pandemic public health, Vaccine, Control measures, Public health management.

Introduction

Communicable diseases or infectious diseases have its effect on human health, and it is noticeable with the outbreak of COVID-19, worldwide (James & Webb Jr, 2015). It is untruly to believe that communicable diseases are easily controllable and can be effectively eliminated from the earth. Wuhan, China, has witnessed the atrocious impact of this novel coronavirus disease and had to shut down the region from rest of mainland China to control the pandemic scenario (WHO, 2005a, 2020b). Severe Acute Respiratory Syndrome coronavirus 2 (SARS-CoV-2), formerly named to as 2019-nCoV, is the virus accountable for triggering COVID-19 (WHO, 2020c, CDC, 2019). The effect of COVID-19 not only restricted to mainland China but also worldwide (WHO 2020c). The impact of COVID-19 has forced everyone to realize the threat of infectious diseases to mankind. The question of sustainable solution be contingent on the epidemic process, which include various aspects like occurrence, diffusion, and termination of diseases, and which it interns depends on the contagion sources, spread routes and vulnerable population. Health specialists everywhere in the world are occupied to develop a vaccine for COVID-19 as it continues to diffuse round the world.

Literature Review

Historical Perspective

- 14th century Europe: bubonic plague. 25 million (pop. 100 million)
- 1918-1920 Worldwide Influenza epidemic. 50 million or higher
- 1981-currently AIDS: >25 million lives + 33 million living with HIV
- Recent smaller outbreaks:
- 2002-04 SARS: 8k cases, 774 death
- 2009 Avian flu: 151k-575k deaths
- 2014-16 Ebola: >11k deaths

Source: Notes by Flavio Toxvaraed; Baldwin and Weder di Mauro (2020), "Economics in the Time of COVID-19"

The COVID-19

As it is exemplified in the above diagram COVID-19 is a sphere-shaped or pleomorphic enclosed element covering single-stranded (positive-sense) RNA connected with a nucleoprotein within a capsid encompassed of matrix protein. The wrapper stands club-shaped glycoprotein projections. Some of the coronaviruses too comprises a hem agglutinin-esterase protein (HE) (de Haan, Kuo, Masters, Vennema, Rottier 1998). It is reported that amongst all RNA viruses, COVID-19 embrace the largest genomes (26.4e31.7 kb), with G þ C contents varying from 32% to 43%. Unpredictable numbers of small ORFs are existing between the numerous conserved genes (ORF1ab, spike, envelope, membrane and nucleocapsid) and, downstream to the nucleocapsid gene in varied coronavirus lineages. The viral genome comprises distinguishing features, together with a unique N-terminal portion within the spike protein. Genes for the main structural proteins in all coronaviruses occur in the 50e30 order as S, E, M, and N (Woo, Huang, Lau, Yuen. 2010). Clearly illustrative in its structure, a distinctive coronavirus comprises at least six ORFs in its genome. However, there is some structural variation in Gammacoronavirus. It is observed in this case that lakes nsp1, the first ORFs (ORF1a/b), about two-thirds of the whole genome length, encode 16 nsps (nsp1-16). ORF1a and ORF1b cover a frameshift in between which produces two polypeptides: pp1a and pp1ab. Add to the point, such polypeptides are managed by virally encoded chymotrypsin-like protease (3CLpro) or major protease (Mpro) and one or two papain-like proteases into 16 nsps. sgRNAs of CoVs are the source of all structural and accessory proteins. It clearly visible that all the four main structural proteins comprise spike (S), membrane (M), envelope (E), and nucleocapsid (N) proteins are encoded by ORFs 10, 11 on the one-third of the genome near the 30-terminus. (van Boheemen, de Graaf, Lauber, Bestebroer, Raj, Zaki, et al. 2012; Czub, Weingartl, Czub, He & Cao. 2005). In addition to these, COVID-19 encode distinct structural and accessory proteins, which include as HE protein, 3a/b protein, and 4a/b protein. These matured proteins are accountable for numerous significant purposes in genome upkeep and virus replication (van Boheemen, de Graaf, Lauber, Bestebroer, Raj, Zaki, et al. 2012). COVID-19 membrane comprises of three or four viral proteins. The utmost plentiful structural protein is the membrane (M) glycoprotein; its extents the membrane bilayer three times, exiting a small NH2-terminal sphere external the virus and an extended COOH terminus (cytoplasmic domain) inside the virion. (de Haan, Kuo, Masters, Vennema & Rottier, 1998). The spike protein (S) constitutes the peplomers. As it is observed, the core inducer of nullifying antibodies is S protein. M plays a major role

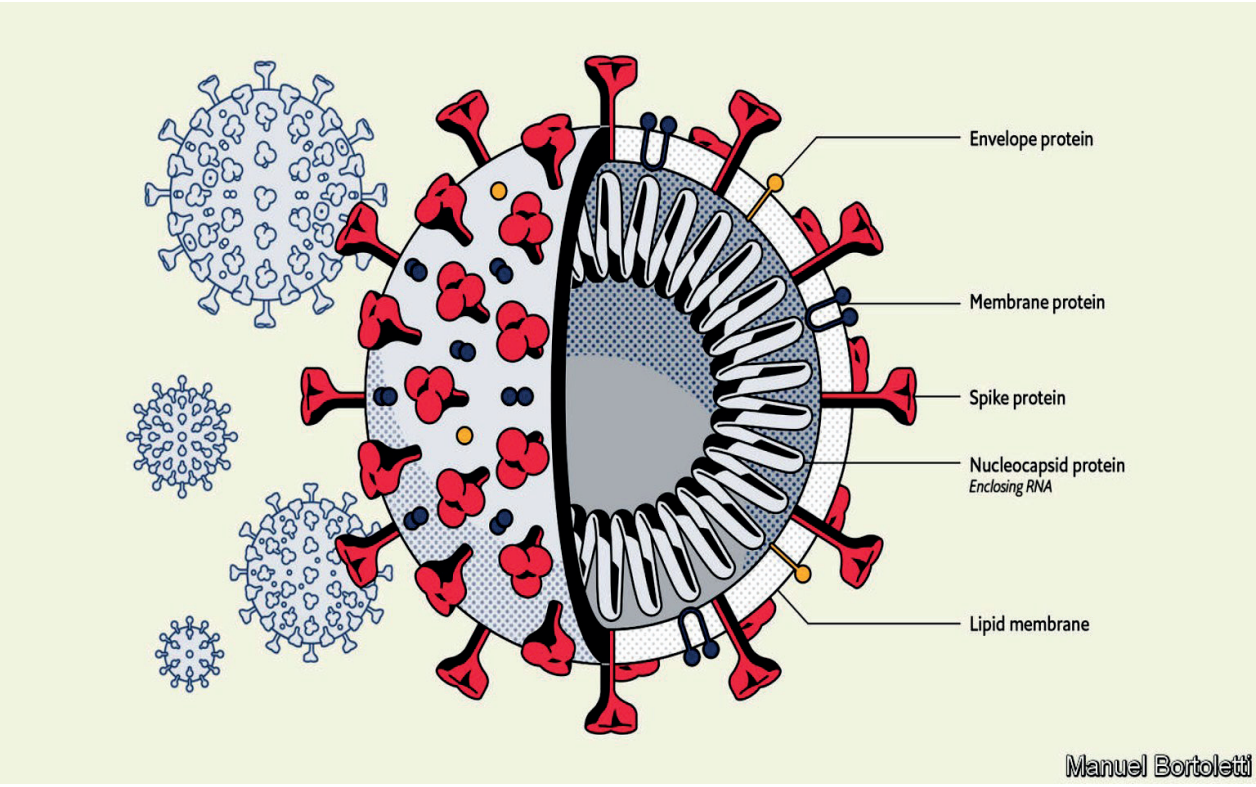

Figure 1: The covid-19
Source: The Economist, 14th March 2020

in the intracellular development of virus elements without requiring S. In the presence of tunicamycin coronavirus raises and develops spike-less, noninfectious virions that contain M but devoid of S (de Haan, Kuo, Masters, Vennema, & Rottier 1998; Woo, Huang, Lau, & Yuen2010).

Methodology

Content analysis is a tool widely used in qualitative research to extract the codes, categories and themes which are emerged from given qualitative data. This particular study made use of journals, articles. Medical reports, doctor's commentaries, statistical data and public health reports for content analyses and come up with proper information for dissemination. Language has long been seen as closely connected with identity in a number of distinctive ways (Satpathy, 2019). Investigators looked into the messages within the texts and derive individual and group feelings on the said categories and themes. The primary sources of the data derived through interviews and observations.

How contagious is the COVID-19? (Ro)

The reproductive number (Ro, pronounced *R-nought* or *r-zero*) is related to the transmitability rate or the outbreak rate of the virus, which signifies the average quantity of people to which a single infected individual will transmit the virus.

- WHO's predicted (on Jan. 23) Ro to be between 1.4 and 2.5. (WHO, 2020).
- Other studies have estimated a Ro between 3.6 and 4.0, and between 2.24 to 3.58.
- Initial figures had projected Ro to be between 1.5 and 3.5.
- An outburst with a reproductive number of below 1 will steadily vanish.
- For comparison, the Ro for the common flu is 1.3 and for SARS it was 2.0.

COVID-19 Fatality Rate

COVID-19 is a new virus and there is little information about this virus due to little opportunity for the clinical trials. As it is reported, soon after the outbreak of COVID-19, the mortality rate over a period of 1 year per 100 000 Chinese citizens would be around 0·23 (as of March 16, 2020). Several factors contribute to high and low rate of mortality which include Health care capacity and capability factors, including the availability of healthcare workers, resources, facilities, and preparedness. Consequently, precisely speaking, neither older estimates nor new calculation can be referred to as the mortality rate. Although highly transmissible, the (Case Fatality Rate) CFR of COVID-19 appears to be lower than that of SARS (9·5%) and Middle East respiratory syndrome (34·4%), (Munster Koopmans van Doremalen, van Riel, de Wit 2020), but higher than that of influenza (0·1%) (de Wit E, van Doremalen Falzarano, & Munster 2016; Fauci, Lane, & Redfield 2020). The new COVID-19, where the case fatality rate has been estimated at around 2%, (WHO, 2020).

COVID-19 Incubation Period

There are several research reports available on the COVID-19 incubation period. Early transmission studies on undercurrents of COVID indicates that the average incubation period was 5.2 days (95% confidence interval [CI], 4.1-7.0), with the 95th percentile of the distribution at 12.5 days (Li Q, Guan X, Wu P, Wang X, Zhou L, & Tong Y, et al. 2020). Remarkably, a long incubation time means adaptations in screening and control policies (Jiang, Rayner & Luo 2020). The 19-day incubation period is a low likelihood event, and specialists propose 14 days for isolation. It is thus estimated in general that the incubation period **(**time from exposure to the development of symptoms**)** of the virus is estimated to be between 2 and 14 days based on the following sources.

Comparative Analysis of Emergence and Spreading of Coronaviruses

During 2003, the history claims that, Chinese of community Guangdong has infected with a virus causing called Severe Acute Respiratory Syndrome (SARS). The patient who suffered this illness echoed the symptom of pneumonia with a diffused alveolar injury, that lead to acute respiratory distress syndrome (ARDS). Later the scientists established that virus was belonging to the Betacoronavirus subgroup SARS-CoV (Peiris, Guan, Yuen, 2004; Pyrc, Berkhout & Van Der Hoek, 2007). The virus spread quickly, and it led to the infection of more than 8000 individuals and 776 deceases. While in 2012, it was also reported that a several Saudi Arabian nationals also diagnosed with different coronavirus.

The spotted virus was established as a affiliate of coronaviruses and named as the Middle East Respiratory Syndrome Coronavirus (MERS-CoV). Based on the WHO report almost the MERS-CoV caused 2428 individuals and 838 deaths (Rahman, & Sarkar 2019). Phylogenetically MERS-CoV varied from other human-CoV. It is reported that this virus is part of beta-coronavirus subgroup. A low level upper respiratory injury can initiate the development of acute respiratory illnesses among human being with this virus. The patients infected with MERSCoV starts with pneumonia and then will lead to ARDS and renal failure (Memish, Zumla, Al-Hakeem, Al-Rabeeah, & Stephens, 2013). It has been informed by the Chinse government to WHO that they have observed some sort of unacquainted etiology on pneumonia, with varied cases obtained. As it is reported in several articles, the outburst was started from the Hunan seafood market in Wuhan city of China and swiftly infected more than 50 individuals. The Hunan seafood market is widely known as a market which usually sell bats, frogs, snakes, birds, marmots and rabbits (Wang, Horby, Hayden & Gao, 2020). With the symptomatic similarities National Health Commission of China reported additional particulars about the epidemic, recommended virus-related pneumonia (Wang, Horby, Hayden & Gao, 2020).

Based on the constant analysis isolates from the patients done by the health experts the virus was recognized as a different coronavirus. Furthermore, the genetic order was also provided for the diagnosis of viral infection. Originally, it was proposed that the patients infected with Wuhan coronavirus brought pneumonia in China may have visited the Hunan seafood market or might have consumed infected animals or birds. The diffusion of virus is thus occurred through close interaction with an infected person, exposed to coughing, sneezing, respiratory droplets or aerosols. These aerosols can penetrate the human body (lungs) via breath over the nose or mouth (Phan, Nguyen, Luong, Nguyen, Nguyen, & Le, et al. 2020; Riou, & Althaus, 2020; Parry, 2020, Li, Guan, Wu, Wang, Zhou, & Tong, 2020)

Symptoms

What makes more confusing to the experts in identifying whether the virus infected is COVID-19 or not is the variations in the symptoms. It's tough to distinguish how the virus will affect any individual person and the symptomatic confirmation. However, some observations in this regard provide better understanding on symptoms of COVID-19. It is reported that approximately 5.2 days after the incubation period the infection appear, the symptoms start appearing (Li, Guan, Wu, Wang, Zhou, & Tong, et al, 2020). A median of 6 to 41 days is usually agreed by the experts from the commencement of COVID-19 to death. However, such duration is depending on the several factors like the age of the patient and status of the patient's immune system. As it is reported the age of patients > 70-years old,

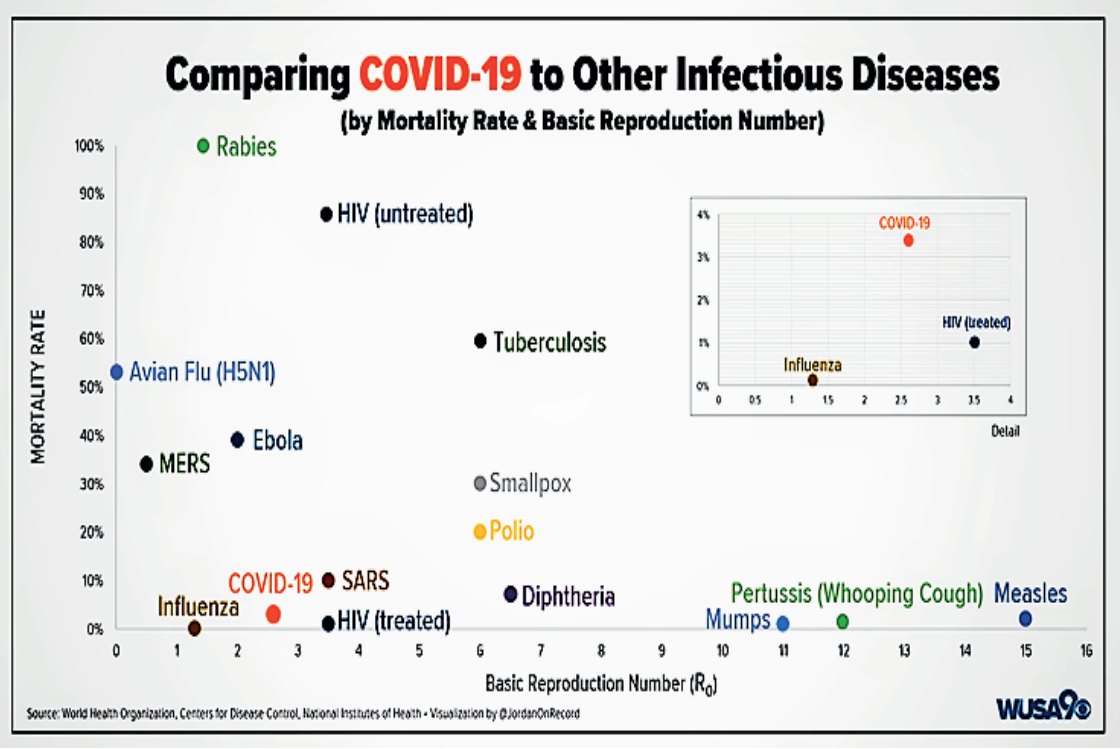

Figure 2: Covid19 and other infectious diseases
Source: WHO, Centre for Disease Control, National institute of Health

compared with those under the age of 70 (Wang, Tang, Wei, 2020). The most shared symptoms at commencement of COVID-19 infection are fever, cough, and fatigue, whereas additional symptoms include sputum production, headache, hemoptysis, diarrhea, dyspnea, and lymphopenia (Ren, Wang, Wu, Xiang, Guo, & Xu, et al., 2020, Huang, Wang, Li, Ren, Zhao, Hu, et al., 2020, Wang, Tang, Wei, 2020, Carlos, Cruz, Cao, Pasnick, & Jamil, 2020). Though the CT scan reports obtained from the lab is identified the illness as pneumonia, there were atypical features such as RNAaemia, severe respiratory distress syndrome, severe cardiac injury and occurrence of grand-glass opacities that led to death (Peiris, Guan, & Yuen, 2004). Scientists have observed resemblances in the symptoms amongst COVID-19 and earlier betacoronavirus such as fever, dry cough, dyspnea, and bilateral ground-glass opacities on chest CT scans (Peiris Guan & Yuen 2004). Even though such resemblances exists, COVID-19 displayed some exclusive clinical features that comprise the targeting of the lower airway as manifest by upper respiratory tract symptoms like rhinorrhea, sneezing, and sore throat (Kan, Wang, Jing, Xu, Jiang, Yan et al. 2004; Zheng, Guan, Wong, Zhou, Wong, & Young BWY, et al. 2008). Add to those symptoms, it is also observed by health specialists that some of the cases of chest radiographs confirm an infiltrate in the upper lobe of the lung that is related with growing dyspnea with hypoxemia (Shi Z, & Hu 2008). Significantly, the patients infected with COVID-19 established gastrointestinal indications like diarrhea, a low level of MERS-CoV or SARS-CoV patients experienced similar GI distress. Henceforth, it is significant to test faecal and urine samples to dismiss a possible alternate route of transmission, explicitly through health care workers, patients etc. (Zheng, Guan, Wong, Zhou, Wong, & Young BWY, et al. 2008).

How is COVID-19 different from Influenzas?

Health experts have come with a comparison between COVID-19 and influenza, in order to make the public aware about the symptoms associated with resultant illnesses. Both these viruses cause respiratory disease, hitherto there are significant differences amongst these two viruses and how they diffuse into society. This has significant consequences for public health measures that should be executed to respond to each virus.

Why has the virus spread so fast?

Quoting the expert opinion WHO stated that the COVID-19 virus is believed to be dispersed primarily by

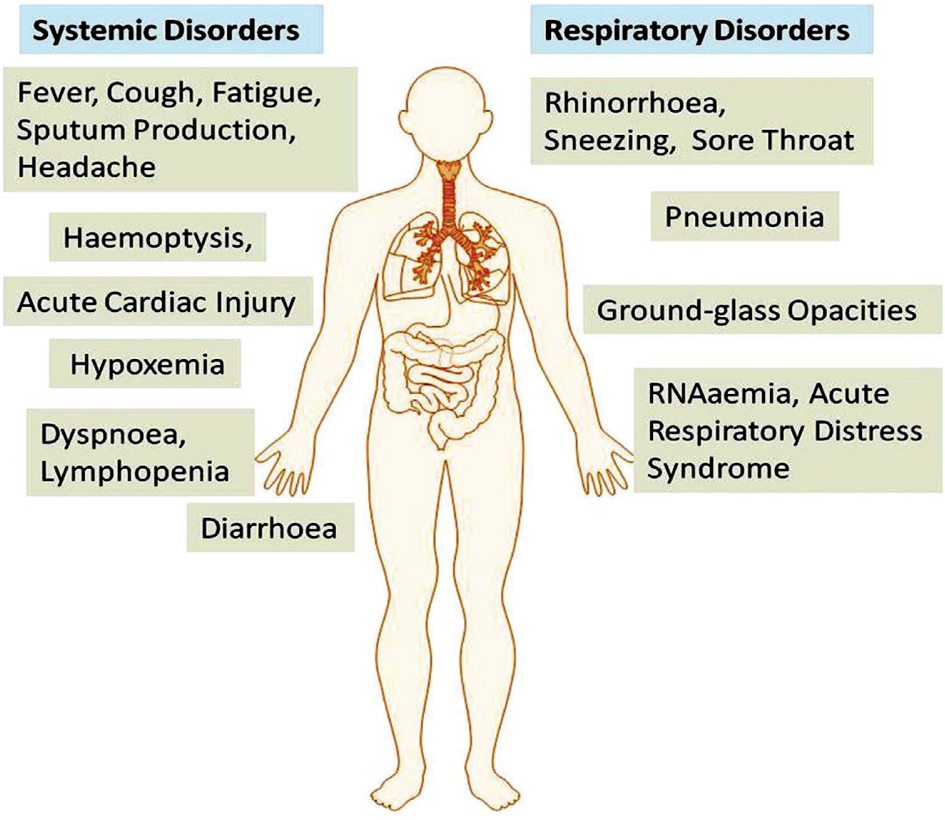

Figure 3: Systemic and Respiratory disorders
Source: Rothan and Byrareddy, 2020

Table 1: COVID-19 difference from Influenzas

COVID-19 compared to other common conditions				
Symptom	**COVID-19**	**Common cold**	**Flu**	**Allergies**
Fever	Common	Rare	Common	Sometimes
Dry cough	Common	Mild	Common	Sometimes
Shortness of breath	Common	No	No	Common
Headaches	Sometimes	Rare	Common	Sometimes
Aches and pains	Sometimes	Common	Common	No
Sore throat	Sometimes	Common	Common	No
Fatigue	Sometimes	Sometimes	Common	Sometimes
Diarrhea	Rare	No	Sometimes*	No
Runny nose	Rare	Common	Sometimes	Common
Sneezing	No	Common	No	Common

*Sometimes for children
Sources: CDC, WHO, American College of Allergy and Immunology

respiratory droplets. When infected individual breathes, cough, or sneeze they oust little droplets of moisture that have the virus. People near to the infected person could breathe droplets of moisture and thus will be affected. Even the virus which is landed on the floor or any other surface when touch by individuals also get infected. By touching the mouth, nose or eyes, after contacting with an infected person or surface thus turned to be the causative factor behind rapid spread of this virus. The survival chance for this virus is very high in several accession. It is also confirmed by the scientist that the virus can remain viable on a hard, surface like plastic or steel for around three days, and a rough surface like cardboard for about a day (Morawska 2006).

The mode of transition is varied from viral droplets. The scientists also suggested two added possible routes that need to be explored: fecal-oral and airborne. Airborne transmission describes as circumstances where the droplet nuclei (residue from evaporated droplets) or dust particles holding microbes can stay suspended in air for unpredictable period. It is informed that these microbes should be capable of living for long periods external the body and unaffected to drying. Airborne spread permits microbes to pass in the upper and lower respiratory tracts.

Some health experts claim that new coronavirus is not "airborne" — meaning that unlike extremely contagious diseases like measles, it's unlikely to linger in the air for hours on end. But that doesn't mean the virus can't linger in the air for some amount of time. Some scientists explain that the novel coronavirus is not airborne. Nevertheless the corona virus can possibly still remain in the air for some time and under some conditions. However, there is no consensus regarding under what conditions it stays and expires. One thing is sure that the virus definitely will be in the air, after an infected person sneezes or coughs, but there is no clarity in this inference that when the particles finally come to rest on the ground. The global as well as 75,465 COVID-19 cases in China reported, no airborne transmission (WHO 2020). However, WHO cautions that "airborne transmission may be thinkable in explicit conditions and locations."

Certain medical measures like intubation, suctioning, and ventilation may conceivably create airborne viral aerosols. Hence in hospital settings, it's vital for health care staffs to wear appropriate personal protective equipment (PPE) to prevent the viral infection. One of the constrain to get identify the spread of COVID-19 symptom is, difficulty in recognizing people with mild symptoms and people without symptoms. It is reported by WHO that between 25 and 50 percent of people infected with the virus show no symptoms. As it is expected some percentage of those asymptomatic cases can spread the virus to others. Such situation makes it too dangerous with the fact that COVID-19 virus can spread sneakily and silently it also likely to diffuse before a person shows symptoms. Before precipitating the symptom, if infected individual attends any group functions can spread the disease so fast to others in the group. It is reported that presymptomatic spread was found in a singing class, church pew, and households (CDC, 2020).

Gender Difference in COVID-19 Infection

Substantiating the gender difference in corona virus impact there are results from several countries. A study

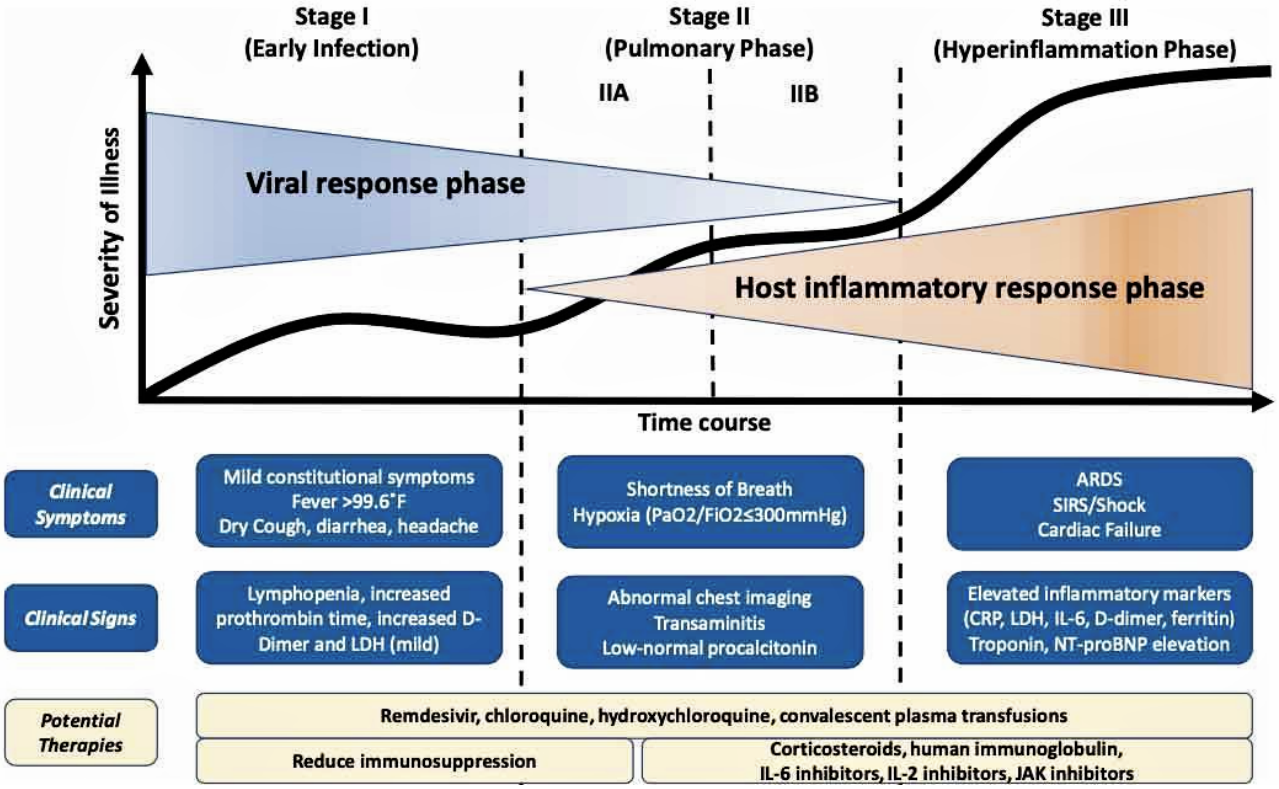

Figure 4: Phases of infection

report from Italy, 1,591 cases of critically ill people who were admitted into intensive care units indicated that about 82% of them were men. Almost similar study conducted in U.S. for COVID-19 in March 2020 observed that males are disproportionately affected by COVID-19 in comparison with females. New York city has affected more COVID-19 in entire US. Public health information from the city of New York, states that men are more likely to be hospitalized and are nearly twice as likely to die. China's Center for Disease Control (CDC) reported that the fatality rate among men with confirmed coronavirus infections was roughly 65% higher than it was among women. Early reports from China, where the COVID-19 first appeared, and from South Korea, where detection and tracking of COVID-19 infections have been all-inclusive. In South Korea, men observed for nearly 62% of all cases. And infected men were 89% more likely to die than were women.

Age and Underlying Diseases related to COVID-19

Reports coming from China and Europe indicates strong correlation between age and COVID-19 related illnesses. A study of 25 death cases in China by the investigators reported that the age and underlying diseases were the most important risk factors for death.

Diabetes and COVID-19 Infection

Diabetes, or Diabetes mellitus, is described by the doctors a condition where the patient having high blood glucose (blood sugar). Diabetes is one of the foremost reasons of morbidity and mortality around the world. Diabetes is a chronic inflammatory condition characterized by multiple metabolic and vascular abnormalities that can affect our response to pathogens (Knapp, 2013). This condition is caused either by because insulin production is insufficient, or because the body's cells do not respond accurately to insulin, or both. Few of the conditions reported by patients' high blood sugar typically experience polyuria (frequent urination), they will become increasingly thirsty (polydipsia) and hungry (polyphagia). Patients with diabetes mellitus found to have more vulnerable towards infectious diseases, which possibly increases their morbimortality. Immune dysfunction (damage to the neutrophil function, depression of the antioxidant system, and humoral immunity) is the major crisis faced by the diabetic patients which are caused by the hyperglycemic environment. Infections, predominantly influenza and pneumonia, are often common and more severe in elder people with type 2 diabetes mellitus (T2DM) (Li, Wang, Zhang, Li, & Liu 2019). A connection amongst diabetes and infection has long been clinically documented (Pearson-Stuttard, Blundell,

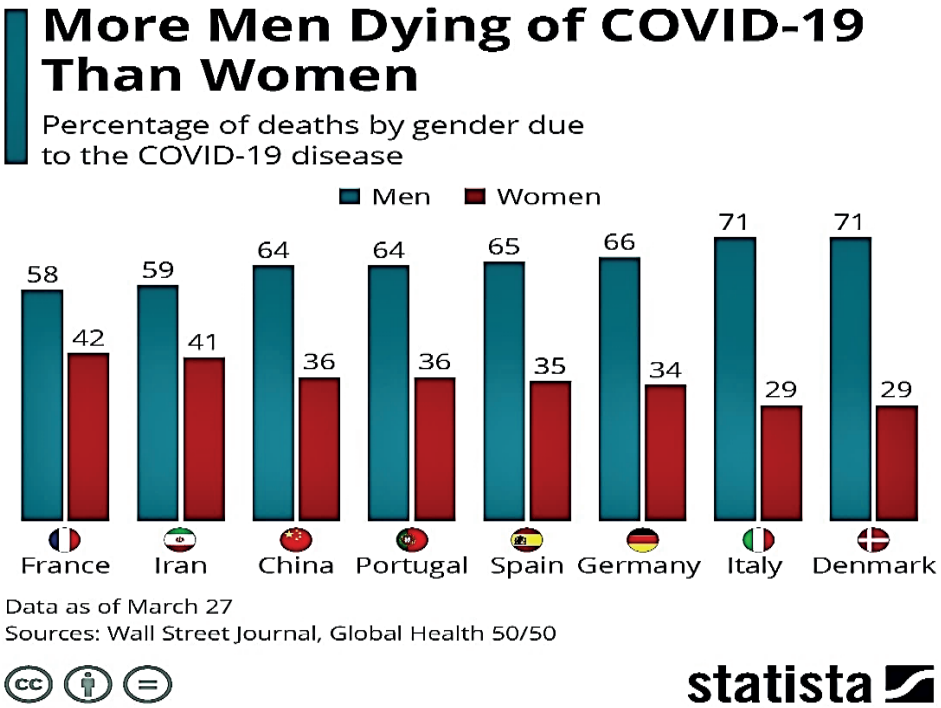

Figure 5: Gender comparison of COVID-19

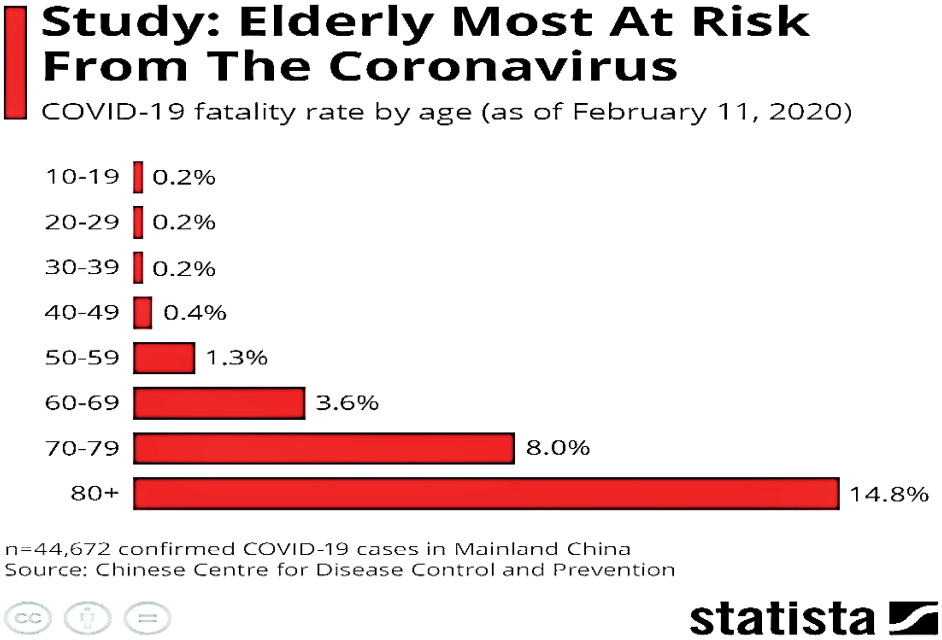

Figure 6: Age variation and COVID-19 infection

Harris, Cook, & Critchley 2015). The scientific evidences suggest that hyperglycemia and insulin resistance reassure augmented synthesis of glycosylation end products (AGEs) and pro-inflammatory cytokines, oxidative stress, in addition to stimulating the production of adhesion molecules that mediate tissue inflammation (Knapp 2013; Petrie, Guzik, & Touyz, 2018). Such inflammatory process may comprise the underlying mechanism that leads to a higher propensity to infections, resulting worst outcomes thereof in patients with diabetes (Knapp, 2013).

Vaccines

The scientific reports from WHO states that at present, there are not any identified active treatments for COVID-19 and does not endorse the use of antiviral drugs, antibiotics, glucocorticoids, or traditional Chinese medicine (WHO, 2020). There are biotechnology firms and universities in China working on SARS-CoV-2 vaccines. Vaccines for SARS-CoV-2 have been advanced much faster than those for Ebola because of the cooperative efforts of global researchers

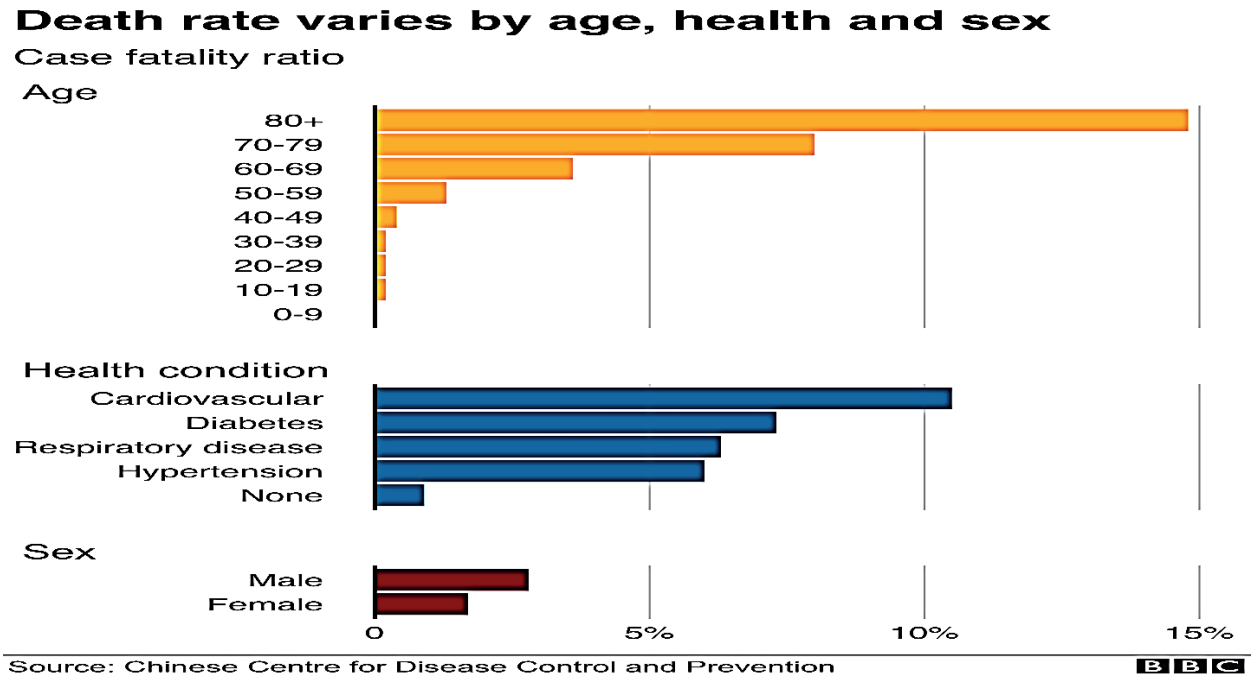

Figure 7: Age, health and gender variation and COVID-19 infection

and the speedy approval of SARS-CoV-2 vaccine development efforts by the Chinese health organizations.

How to control speed of contagion the curve?

In order to avoid excess of demand and control the speed of contagion include two major steps that can be taken to control.

1. Expand intensive care capacity (expand supply of health care)

2. Slowdown the speed of contagion (contract demand for health care)

Why Social Distancing is Important

The purpose of social distancing is to prevent or limiting the physical contact with others by staying away from others as well staying away from all public places where people used to gather around. It is not necessary that you people are sick but avoiding the contact with others or distancing two meters away from others when outside in the publica places can help in slowing the spread of COVID-19. Bodily distancing is also termed as social distancing. The physical distancing in its form does not indicate a total cut off from family or significant others. One need to identify realm of emotional sharing through other means with the support of phone calls, texting, social media and video chat. Distancing does not indicate a disconnect. One should stay connect emotionally or socially but puts space between individuals. If physical contact is not coming up, the probability to diffuse the virus will be less (CDS, 2020). Social distancing comprises of withdrawing from large community gatherings, such as sports events and performances, schools, churches, shopping in big markets and restaurants. Though the experts pointed out this fact that the spread of COVID-19 cannot be stopped,

Table 2: Vaccine testing – Promising drugs to treat COVID-19

Drug	Current Use	Original mode of action	Being tested
Chloroquine	Anti-Malarial	Heme polymerase inhibitor	Yes
Kaletra (ritonavir + lopinavir	HIV	Protease inhibitor	Yes
Interferon alfa-2b	Hepatitis-C	Immune modulator	Yes
Remdesivir	Experimental	Nucleotide analogue	Yes
Favipiravir	Infuenza	RNA polymerase inhibitor	Yes
Actemea (Tocilizumab)	Rheumatoid Arthritis; Covid19	Anti-inflammatory	Approved
Kevzara (Sarilumab)	Rheumatoid Arthritis;	Anti-inflammatory	Trial expected

Source: WHO, adapted from landscape analysis, 17th February 2020. (For use of COVID-19 in March 2020)

but can be slowed down explicitly by measures currently summed up under the term "social distancing". By preventing human contact, it is possible to decrease the transmission rate drastically.

Discussion and Implications

The objective of this paper is to investigate the theoretical knowledge of COVID-19 impact and suggest some measures to management the health of public during the pandemic days. The paper has facilitated the advancement of the body of knowledge in the area of COVID-19 public health issues. The study suggests following recommendations to ensure better public and individual health management.

- People should evade from close contact, especially one should evade near interaction with people who are sick and small children.
- When an individual is sick, better to stay at home.
- Avoid stirring your eyes, nose or mouth. Since the touch can spread the virus one should touches his or her eyes, nose, or mouth. It is also suggested that one should cover the mouth and nose.
- Put a facial mask. Cover your mouth and nose with a tissue, when coughing or sneezing.
- Avoid sharing personal items.
- Clean hands. Washing hands often for 20 seconds will protect one from germs.
- Avoid sharing personal household items and clean all "high-touch" surfaces every day.
- Use consistent household cleaning spray or wipe to clean objects and surfaces at home, work or school.
- Pursue swift medical care, if the illness is deteriorating (coughing, difficulty breathing).
- Keep the air clean. Open a window in the sick room or use a fan to keep fresh air flowing.
- Clean all "high-touch" surfaces, such as counters, tabletops, doorknobs, bathroom fixtures, toilets,

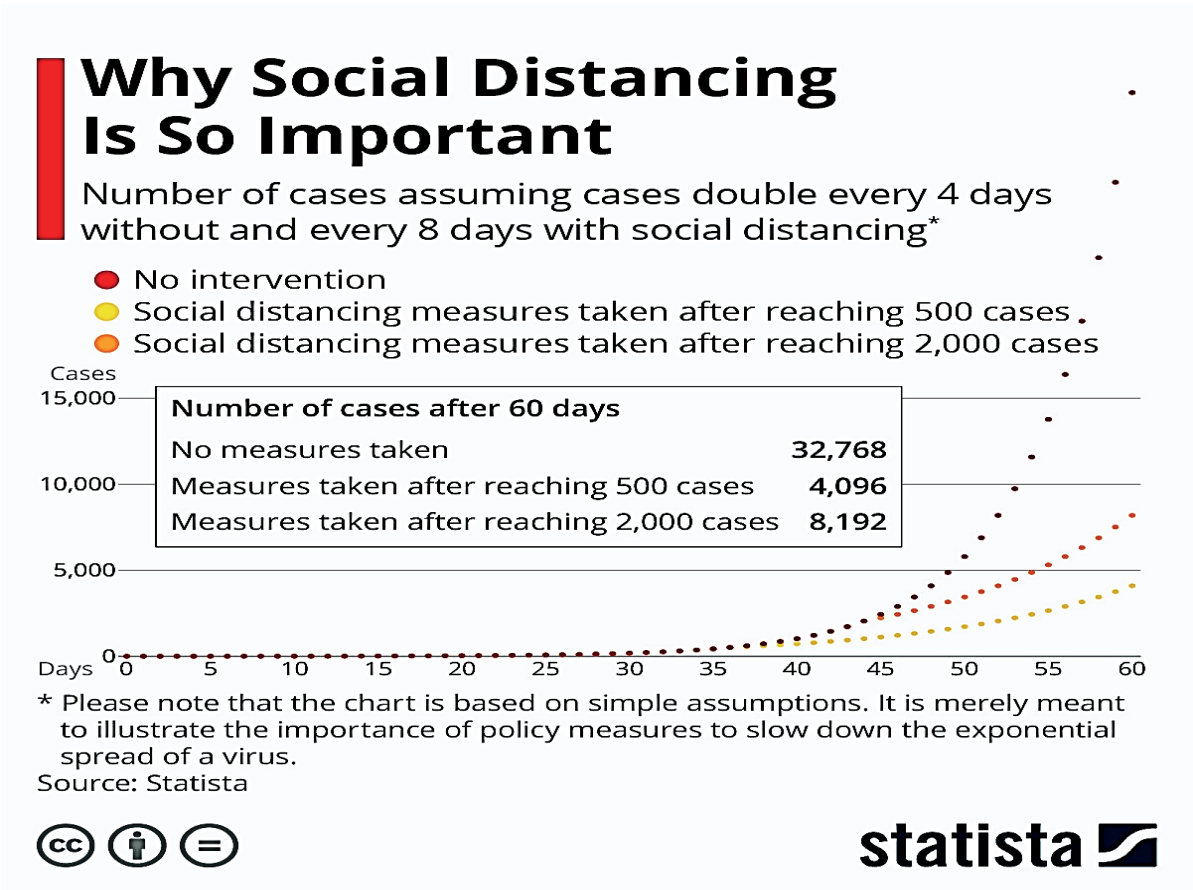

Figure 8: Social distancing

phones, keyboards, tablets, and bedside tables, every day.

- Place all used throwaway gloves, facemasks, and other contaminated items in a lined container before disposing of them with another household waste.
- Avoid close contact with people who are sick.
- Keeping distance from others is especially important for people who are at high risk of getting very sick.
- Avoid eating undercooked animal foodstuffs. Handle raw meat, milk or animal organs with care to avoid cross-contamination with other uncooked food.
- Avoid eating the meat that comes from animals that have died of diseases.
- Enhancing the diet quality in susceptible individuals for COVID-19 might alleviate their risk of severe infection.
- In spite of the indecisive pieces of evidence, oral probiotics are expecting to be the rational adjunctive option in various viral illness control Centers for Disease Control and Prevention, 2020).

Conclusion

The COVID-19 pandemic has diffused very fast across the globe. Many countries got an opportunity to look at their resources and facilities to curb the viral infection. The chapter discussed several aspects spin around COVID-19 like the historical perspective, magnitude of the risk, risk of contagiousness, fatality rate, incubation period, comparison with other contagious diseases, symptoms, gender and age differences in infection, diabetes and proneness, possible vaccines, models of virus diffusion, social distancing and management of health habits. Effective preventive steps can control the virus spread to a great extent. In the process of management of COVID-19 infections, close attention should be paid on both Personal hygiene and social distancing to avoid further spread of the viral infection, till adequate vaccine will be introduced.

Competing Interest Statement

The author has read and approved the manuscript and takes full responsibility for its contents. The author has declared that no competing interest exists.

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CONCEPT PAPER

A Snapshot of Taiwanese Actions for Countering the COVID-19 Epidemic

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ABSTRACT

Taiwan was estimated to have COVID-19 infection cases outnumbering other countries except the disease's country of origin, China. As of April 17, 2020, Taiwan has stood out in preventing and containing its spread. The article attempts to provide a snapshot of the measures the Taiwanese government has taken in countering COVID-19. The measures are discussed in three aspects: tightening border security, containing community transmissions, and relevant supports of the social system. While COVID-19 has developed into a pandemic around the world, presenting a general picture of relevant Taiwanese experiences may provide useful lessons for other countries.

Keywords: coronavirus, COVID-19, community transmissions, pandemic, Taiwan.

Since several COVID-19 cases were officially reported in Wuhan, China, on December 31, 2019, it spread to the rest of China and then developed into a global pandemic. As of April 17, 2020, more than 2,200,000 people have contracted the disease across 187 countries and regions and the disease has taken over 152,000 lives (Taiwan Centers for Disease Control [CDC], 2020).

Taiwan has a population of around 24 million and is located 81 miles off Southeast China. Given that over 2,700,000 of Chinese people traveled to Taiwan in 2019 (Focus Taiwan, 2020), it was estimated that the infected cases in Taiwan would outnumber other countries except China (Zlojutro, Rey & Gardner, 2020). Nevertheless, Taiwan has successfully avoided this catastrophic situation. Only 398 confirmed cases have been reported on April 17, among which ten are domestic and 298 are imported. Six have died. The fatal rate is almost 1.5% which is remarkably lower in comparison to the global average of 6.79% (Taiwan CDC, 2020).

The successful experiences in Taiwan may provide inspiration for other countries in taking relevant action. In the context, this article attempts to present the actions Taiwan has taken to fight the COVID-19 epidemic. By March 3, 2020, 124 relevant measures had been adopted (Wang, Ng, & Brook, 2020), and therefore it is more practical to give a snapshot in the paper, instead of offering all the details.

Tightening Border Security

The first goal for containing COVID-19 is to strengthen border control to ward off community spread because the infected patients are mainly from other countries. A swift response in the very first place is crucial. In fact, Taiwan was the first country to take action in response to the COVID-19 epidemic. According to Taiwan CDC (2020), when several cases of unknown pneumonia, later defined as COVID-19, were publicly reported in Wuhan on December 31, 2019, Taiwan immediately began conducting temperature measurement on the city's incoming travelers. Further, on January 26, Taiwan suspended all flights from Hubei province where Wuhan was located. The flight suspension was expanded to all of China except Hong Kong and Macau by January 28, as the pandemic exploded across China. Chartered flights were scheduled to evacuate business personnel and their families instead. After flying back to Taiwan, they were relocated to three sites for 14-day group quarantine.

From March 19, 2020 onwards, travelers from all countries have been required to undergo two-week home quarantine as covied-19 became a global pandemic. Those who have a higher fever or other relevant symptoms of COVID-19 are transferred on the spot to the designated hospitals for further testing. The rest are ordered to be in home quarantine and the daily supplies of those under home quarantine are catered by the local government. In addition, they are phoned twice per day and their smart phones are located and monitored 24 hours to guarantee their staying home. Starting from January 29, 2020 electronic monitoring through smart phones has been used to tighten the surveillance of those quarantined.

Containing Community Transmissions

The Taiwanese government had taken many precautious and proactive measures to prevent and contain the spread of COVID-19 in the community (see Taiwan CDC, 2020). One such remarkable measure is related to facemasks. From January 24 the government started banning facemask exports, and from January 31 the government started supervising the factories' production and distribution of facemasks. Also, the production lines have progressively increased. This has guaranteed medical staff to have sufficient supplies and each resident to have a ration of two pieces per week in the initial stage. The rationed pieces for each adult and for every child were raised to nine pieces and ten pieces every two weeks on April 9, respectively. From March 12, online ordering has been available. The app is able to provide updated information regarding facemask stocks in each pharmacy across the country. These measures implemented in anticipation of a facemask demand have stabilized the facemask price and might successfully alleviate public panic.

Whenever a domestic case is reported, the details of the travel and residency history are collected. The places they visited would be sanitized thoroughly while those they have closely contacted are mandated to go through 14-day quarantine. Their health situations are monitored and when any of them demonstrates COVID-19 symptoms, they are sent to a designated hospital for testing and treatment.

In light of how some COVID-19 patients were shown to be contagious before developing significant, or any, symptoms (World Health Organization, 2020), social distancing guidelines were released. People not wearing facemasks are advised to keep a physical distance to reduce the risk of contracting the infection. At the moment, 1 meter for indoors and 1.5 meters for outdoors are observed. Also, from April 1, 2020 passengers have been enforced to wear facemasks while taking public transport or entering certain enclosed public places. Furthermore, it has been required to measure the body temperature before entering public places, such as office buildings, shopping malls and schools. Anyone with a temperature 38ºC or higher would not be allowed to enter. It is also common that sanitizers are provided freely in stores and buildings.

Social System Supports

The Taiwanese government's actions to fight COVID-19 require the support of relevant social systems. First of all, Taiwan is a democratic country and people are free to access any information, either facts or disinformation. Therefore, Central Epidemic Command Center established on January 9, 2020 has convened daily press briefings to inform the public of updated statistics and knowledge regarding COVID-19, and rules and policies put into practice. Further, the government has strengthened crack-down on spreading disinformation. A phone line was also set up for the public's enquiries or reporting suspicious disinformation.

The national health insurance (NHI) system in Taiwan is critical in fighting the epidemic. NHI was set up in 1995 and covers 99% of the residents. It provides a comprehensive and cheap healthcare (Wu, Majeed & Kuo, 2010). In Taiwan, screenings of COVID-19 and follow-up treatment are free for all patients. This could encourage people to actively seek medical help. Moreover, designated hospitals are used to run the COVID-19 test.

In addition, technological resources were integrated to successfully enforce home quarantine. The movement of people under home quarantine is restrained and monitored through their smart phones. When any of them leaves the house, a text reminder is sent. If the notice is ignored, the policing network activates to search the targeted resident and subsequently, issues a ticket with a maximum up to $ 1,000,000NT. Therefore, integrating different resources is necessary to counter community transmissions.

Conclusions

Despite the geographic proximity and very frequent interactions between Taiwan and China, Taiwan has effectively controlled the spread of the epidemic with swift responses, at least to date. This may be contributed by

the remarkable measures that have been taken to focus on warding off importation of COVID-19 and containing community transmission. In protecting border security, flights from China and other countries have been progressively suspended. Travelers are mandated to undergo quarantine if necessary and their movements are monitored through smartphones. On the other hand, to avoid the spread of the COVID-19 in the community, comprehensive facemask measures have been anticipated and implemented. When one infected case is reported, his/her travel and residency history is collected and accordingly, quarantine and sanitization are conducted. In addition, fever checking at the entry of public places and social distancing guidelines are important to protect oneself from contracting COVID-19. Keeping the border and community secure needs the support of the social system. These may include information transparency, sound healthcare system, technology advancement, etc. As the world is being severely impacted by COVID-19, the presentation of relevant measures in Taiwan may prove useful for other countries in their battle against the disease.

Competing Interests Statement

The authors have read and approved the manuscript and take full responsibility for its contents. The authors have declared that no competing interest exists.

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Strategies Adopted to Prevent Adverse Effects of COVID-19 in India

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ABSTRACT

Corona virus disease 2019 has created terror and awe in the minds of people throughout the world. It is rightly said that precaution is always better than cure. Through this paper, I have attempted to make some suggestions on the best practices for eliminating the fatal effects of COVID-19. Responsibility comes with the acceptance of such suggestions and proposals. In this period of crisis, the entire world should unite to fight against corona virus. To beat the spread of this disease, all recommendations and suggestions prescribed by the WHO and the health authorities of different states or countries should be followed properly and wholeheartedly. The World Health Organisation has also provided recommendations every now and then for everyone, and social media platforms such as Facebook, Instagram, Whatsapp, along with other applications, are providing tips for creating awareness among the public regarding personal hygiene, social hygiene, feeding habits, social distancing and other minute details. Thus, by sincerely following all recommendations and suggestions, along with having faith in God, people can avoid being infected with the coronavirus.

Keywords: corona, COVID-19, suggestions, recommendations, proposals, hygiene, suggestions.

Introduction

Today, the whole world is in a huge panic and is facing a critical challenge in the form of the corona virus. Every country in the world is profoundly infected in almost every aspect by this fatal virus: economic, political, cultural, or psychological. A new Corona virus has been identified that causes symptoms of respiratory illness and an atypical pneumonia in humans (European Centre for Disease Prevention and Control, 2020). Corona virus disease, now called COVID-19, is a new disease and this disease, with the interim name '2019-nCoV acute respiratory disease (ARD)' [official name: COVID-19], was first identified in the winter month of December 2019 in a city of 11 million people – Wuhan — in Hubei Province, China (Tweeten, Barone, & Wolfson, 2020; World Health Organization, 2020a). The 2019-nCoV ARD is believed to be zoonotic in origin, from bats to intermediate host to humans (Zhou et al., 2020) and its commencement is geographically connected with the Huanan Seafood Market in Wuhan (Cohen, 2020a). Human-to-human transmission of 2019-nCoV has been established, such as through respiratory droplets (Cai, Cheng, Chen, Hui, & Yuen, 2020) and there is also a suspicion of asymptomatic infection (Cai et al., 2020; Kupferschmidt, 2020).

From the information known to date, several facts are pertinent: that it belongs to the same family of Corona viruses that caused the Severe Acute Respiratory Syndrome (SARS) outbreak in 2003 and the Middle East Respiratory Syndrome (MERS) outbreak in 2012. (Choi, Jung, Choi, Hur, & Ki, 2018). Secondly the mortality rate is probably in the range of 1% - 3.4%, which is lower than 10% for SARS and 34% for MERS, but this percentage is significantly higher than the mortality rate for seasonal flu. (Chinese Centre for Disease Control and Prevention, 2019). Thirdly, though emerged from animals, the virus is now spreading through human-to human contact. Thus the infection rate for COVID-19 seems to be higher than that for the seasonal flu and MERS. (Wu & McGoogan, 2020).

	Fatality rate (deaths/ cases)	Infection rate (per infected person)
Ebola Virus Disease	50%	1.5-2.5 (Kucharski & Althaus, 2015)
MERS	34.30%	0.42–0.92 (Breban & Riou, 2013; Cauchemez et al., 2014; Fisman & Leung, 2014)
SARS	10%	3
COVID-19	1-3.4%	1.5–3.5
Seasonal Flu	0.05%	1.3

MERS = Middle East Respiratory Syndrome, SARS = Severe Acute Respiratory Syndrome.

The disease has been transmitted to other parts of China and to other countries (Singapore, Thailand, Japan, South Korea, Australia, Germany, USA, Philippines, etc.) generally through travel-related activities (Johns Hopkins CSSE, 2020). The World Health Organization (WHO) declared the 2019-nCoVARD outbreak as a 'Public Health Emergency of International Concern' on 30 January 2020, specifically to strengthen the level of alertness of countries that need additional assistance (World Health Organization, 2020b).

The study has been planned to create awareness among public against COVID-19. India is the world's second most populous country with almost 1.3 billion people and preventing such a large number of people from corona virus infection is a challenging task considering the lack of medical facilities and minimum medical experts and it is true according to the present situation that many public hospitals in India are overcrowded and no proper individual care is given to each patient. Poverty is again a big crisis being faced by India and the latest records bring forward the fact that in 2015, 176 million people were living in extreme poverty (World Bank Group, 2020) thus, in this context, the outbreak of COVID-19 pandemic and the lockdown situation are expected to increase poverty in the country. The poor vulnerable community is more exposed to the risk of COVID-19 and the only alternative is to spread awareness about personal hygiene and maintaining social distancing among them through various sources as electronic and print media –TV, mobiles, newspapers, and pamphlets. Therefore the objective of this article is to make people aware of various symptoms of this pandemic and adopting various protective strategies to prevent the adverse effects of COVID-19.

Pandemic lockdown in India was imposed in different four phases—Phase I- from 25th March to 14th April 2020, Phase II—from 15th April to 3rd May 2020, Phase III—from 4th May to 17th May 2020 and Phase IV—form 18th May to 31st May 2020 (Wikipedia, 2020). Now India is passing through the fourth phase of lockdown and still the situation is same as day by day the number of COVID-19 patients is increasing in certain zones, which have been declared as red zones. Suggestions and recommendations have already been framed by WHO for the health benefits of all people throughout the world. Suggestions pertaining to diet, daily activity, productive use of time during lockdown, therapies, social distancing, wearing masks, maintaining personal and social hygiene have been delivered. The data have been collected from World Health Organisation (WHO), Department of Health, Ministry of Health and Family Welfare, Medical Council of India, personal advice of elders, old people, parents, family members and friends.

The spread of any type of pandemic in a particular place does not only affect the lives but it also affects every aspect of human lives. This pandemic in the form of corona virus has caused tremendous problems for each and every country. It has affected every small and large scale business. Through the present concept, I have attempted to analyse the present dangerous situation faced by every citizen of this world, to explore valuable information pertaining to COVID-19 along with some valuable suggestions and strategies to prevent the adverse effects of this fatal enemy.

In order to protect ourselves and others from Corona virus, one of the most effective and significant methods is social distancing because by keeping moderate distance from other person the chain of this contagious infection can be broken and no vaccine has been invented till now against COVID-19 (Centres for Disease Control and Prevention, 2020) thus, the best way to prevent infection is not to being exposed to this virus. Therefore social distancing is one of the best ways as prescribed by the health authorities. Corona virus spreads basically from person to person with touch, cough droplets, sneezing and close contact. The main cause of spreading infection is from patient's droplets when he coughs, talks or sneezes and these droplets get inhaled into the lungs of nearby people and sometimes people don't show any symptoms of this infection and act as carriers to spread this fatal infection. This is one of the most dangerous situations where people even don't know they are infected and move confidently among public and spread infection unknowingly. Social distancing thus proves to be beneficial for cutting down the infection. This protocol of social distancing has been approved and established as an order for all people around this world by all countries. Through this protocol all people are said to be confined or quarantined in their own houses by eliminating their every sort of social interactions, social communications, and travelling, shopping and other business interactions.

It is obvious that if people don't come in contact with each other, the risk of spreading infection will be much less. Close contact with people should be avoided. While going out always maintain distance of minimum 1 metre from others (World Health Organisation, 2020). The next precaution against corona is the use of sanitizers as recommended by WHO (World Health Organisation, 2020). Nowadays, on social media such ads and information are cropping up day by day to get the public informed. Use of sanitizers is no doubt helpful to reduce infection but doctors have recommended the use of soap and water is much better way to minimize infection. It is suggested by World Health Organization (WHO) that every person should wash hands often with soap and water after touching anything, sneezing, coughing, blowing nose and after coming back from public place. Touching of face, nose, lips, mouth with unwashed hands should be avoided. Sanitizers with 60% of alcohol should be used and cover all surfaces of hands and rub them together until it gets absorbed into the skin (World Health Organisation, 2020). Even by staying at home handles of doors, knobs, latches, tables, keyboards, faucets mobile phones, desks, sinks, toilets and bolts should be sanitized.

Wearing masks is a significant and effective precaution to minimise the spread of infection of corona virus. While going out for purchasing vegetables, fruits or grocery products everyone should wear a mask. It should be kept in mind that kids under age 2 or anyone who has trouble in breathing or is not able to remove mask without any assistance, proper assistance should be made available for them in wearing and removing masks. Once used face mask should be washed properly for its reuse (CDC, 2020). All doctors and nurses throughout world who have been treating patients are taking proper precautions by wearing masks. Those patients who have been quarantined and are kept in separate setting should wear masks or use tissues while sneezing and throw them in the trash.

Children and youth of today are powerful agents of change and act as caretakers for the next generation thus, cataclysm of COVID-19 further provide an opportunity to assist them to learn, develop compassion and increase pliability for building a safer and considerate community. Teachers at large play a significant role in providing basic principles and practices to help students and society to stop the spread of disease. Once used face mask should be washed properly for its reuse.

In this critical period education department is facing much trouble. The lockdown period started in Punjab from 16th of March 2020 and Punjab government issued an advisory thus all educational institutions such as all government and private schools, colleges and universities had been closed. Therefore students and faculty members have been diverted towards other online education imparting tools such as Facebook, Whatsapp, Google classes, Zoom online classes and other online tools to finish their syllabus. One positive factor of this quarantine period has given an opportunity to all faculty members to learn all new online techniques to impart education and this might be the positive factor of this critical period.

To avoid risk at large scale government has developed strict and precautionary attendance policies. Strict restrictions has been imposed upon the latest trackers to limit their attendance who have visited within the past 70 days from different countries such as China, Italy, UAE, Iran, South Korea and Hong Kong. It should be made mandatory to ask international attendees to show their passports and especially those guests who have recently visited and included in the targeted list of high risk countries should not be allowed for entry. All countries should adhere to the travel restrictions. Any attendee with flu-like symptoms should be discouraged to attend any social gathering and a special care should be taken regarding who have a runny or stuffy nose, cough, sore throat, diarrhoea, nausea within the past two weeks should not be permitted to attend any sort of event. Being a responsible citizen everyone should sincerely follow World Health Organization (WHO) and Centres for Disease Control (CDC) guidelines. Frequent updates should be sent to everyone regardless of their profession on safety rules.

During a self-quarantine period, people get indulged in over-purchasing and this is being seen throughout the world. Panic-buying behaviour always has adverse consequences such as high prices of food stuffs, overconsumption of food and unequal distribution of food products. Therefore, before buying anything hurriedly, one should consider his own needs and plan accordingly. In the time of high crisis, it becomes necessary to make purchases in large amounts but first one should need to look what one has already in his pantry to be consumed on a first serve basis. This will bring less food wastage and allow equal distribution of food.

Always use fresh fruits, vegetables and non-perishables. If all fresh products, such as fruits, veggies and dairy products such as milk, cheese, curd and butter are available on regular basis, always use them first over non-perishables. All such stuff can be stored in refrigerators for longer periods.

Undoubtedly, lockdown period has made people very health conscious and now they have come to know the

real value of homemade food and they are following good food hygiene practices. Only homemade food is healthy food has become the maxim of people's lives. Staying at home now has made this possible to consume only handmade and hygienic meals. This can be seen on all social websites such as facebook, Instagram and others where people are trying everyday a new recipe. During lockdown period as per safety measures people follow general rules regarding keeping hands, kitchen and utensils clean, using safe and pure water, cooking food properly and keeping distance between raw and cooked food.

Most of people during lockdown period feel anxiety, stress and tension, as they have been deprived of their daily activities and it is true that sometimes changes in life bring happiness and sometimes boredom and this recent change in the routine of people has been brought for their safety concerning their health issues. Thus, to avoid all such negativities they should develop healthy routines such as waking up early, doing meditation, yoga, aerobics, cracking jokes, developing reading habits, reading stress-boosting material and always bearing a positive attitude. Students are in great tension, as the time of their annual or semester exams has not yet fixed by their institutions so instead of taking tension they should use their time productively and constructively in making something new from their learned experiences even online classes are being provided to almost all the students by their faculty members so whatever is being done to compensate the loss of academics is praiseworthy. Thus, all students and teachers should maintain perfect coordination in delivering their material and getting feedback from their students. Everyone should remain optimistic and positive during this critical time and for boosting morale different programmes on stress busters can be seen on television, internet and other social media.

Conclusion

Finally, here my goal is to provide the best practices for public pertaining to this prevalent fatal enemy COVID-19. It is not only the responsibility of officials, government, police department, law department and medical department to inform the public and make the entire community aware about corona virus, but every human being on this planet should be responsible and should show sincerity towards this sensitive issue. Each department, whether police or medical, has made hundred percent sincere efforts towards eliminating fatal infections from the entire world. At this time, all human beings are sailing in the same boat and in this time they should be united physically and emotionally because unity is strength. With the commencement of this disease, the whole world has become one by eliminating all sorts of barriers and there's no wrong in saying that God has shown his power once more to regenerate the lost faith in Him. We all should understand His message that always reminded us whether we are rich or poor as all such material goods, materialistic attitudes, scientific advancement, modernity are nothing and mere wastage of time and always keep blind trust in God and his power.

At last I want to thank all my family members especially my eldest sister who is doing PhD in History from Punjabi University, Patiala. She has given me good assistance in writing this article on COVID-19. My mother shared her valuable suggestions on how by keeping personal hygiene we can protect ourselves from this fatal infection. I am very grateful to my sister-in-law, Dr. Amanpreet Kaur, Assistant Professor of Punjabi at Patel Memorial College, Rajpura, for her precious words to prevent corona infection. I appreciate all social media and sites for sharing latest information regarding COVID-19. All types of communication whether written or oral has helped me a lot in writing this article.

Competing Interest Statement

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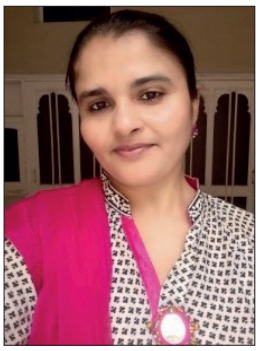

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SHORT COMMUNICATION

Self-care for Public Health Concept with Coronavirus Crisis in Thailand

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ABSTRACT

The World Health Organization announced on January 20th, 2020 that the COVID-19 epidemic is a Public Health Emergency of International Concern (PHEIC). After that the Thai government announced an emergency situation in all areas of the Kingdom of Thailand, from March 26th–June 15th 2020 and curfew later. COVID-19 crisis is one of the biggest crises of global health and the greatest challenge with the world. A public health concept reported that self-care plays an important role both in individual and public health systems including health promotion, prevention, and control disease, providing health care to persons, and seeking health care systems. The aim of this study is to study and describe about self-care for public health concept during coronavirus crisis in Thailand. It is based on social determinants of health (i.e., social distancing). Documentary research was used. Data collection was done by collecting data of CCSA, and Ministry of Public Health, Thailand during April 13th–23th, 2020. Data description, number of total infectious cases, the number of novel COVID-19 cases, death, remedied, and hospitalized cases with COVID-19 disease were analyzed. The results found that number of new COVID-19 patients decreased continuously and gradually and increment of number of remedied COVID-19 cases. The guideline of self-care recommendations from public health perspective with COVID-19 outbreak in Thailand from the Ministry of Public health has 14 guidelines. It was notified that it is based on some social determinants of health such as social distancing. Report of the department of mental health, Ministry of Public Health, Thailand on April 22nd, 2020, outlines that level of stress and anxiety increased when COVID-19 pandemic crisis occurred on March, 2020. It indicated that the trend of corona virus crisis in Thailand will be controlled and normal public health will return by following the "Stay home, Stop the disease, for the nation" motto of the Thai government.

Keywords: COVID-19; coronavirus crisis; pandemic, public health concept, self-care, Thailand.

Introduction

The World Health Organization announced that the COVID-19 epidemic is a Public Health Emergency of International Concern (PHEIC) but WHO has not made any announcements on travel restrictions on January 20th, 2020. In Thailand, Thai government and Ministry of Public health listed coronavirus disease 2019 as the 14th dangerous communicable disease under the Communicable Diseases Act on 29 February 29th, 2020. Then, on March 5th, 2020 made an announcement that coronavirus disease infected zones are people's Republic of China, including special territories Macau and Hong Kong, the Republic of Korea, the Italian Republic and the

Islamic Republic of Iran. Self-protection for tourists has been implemented by surveillance, screening, and prevention and control measures. Therefore, self-care for public health perspective is important and necessary with COVID-19 in Thailand because it promotes health, prevents disease and maintains health in public health concept (World Health Organization, 2016). In the context of a coronavirus outbreak in Thailand, self-care to health promotion and prevention in public health perspective can help to stop infection in the pandemic coronavirus outbreak. Thai government announces the motto of the Thai government statement about staying at home "Stay home, Stop the disease, for the nation" to be the symbolic approach and indicated that Thai people can help public health officers and government with self-care and staying home to stop the coronavirus outbreak in Thailand. If Thai people can self-care by following the public health guideline it will be able to stop the coronavirus outbreak crisis in Thailand.

Literature Review

Self-care for public health concept

The definition of self-care from The World Health Organization (WHO) is "the ability of individuals, families and communities to promote health, prevent disease, maintain health, and to cope with illness and disability with or without the support of a health-care provider" (World Health Organization, 2016).

A concept of public health found that self-care plays an important role. It is both for individuals and for public health systems. At individual level, self-care relates to the capacity and ability to make informed decisions and make use of public health resources as a key contributor to the successful arrangement of heath condition (World Health Organization, 2019). In public health system, self-care includes health promotion; prevention and control of disease; providing health care to persons; seeking health care system which related to specialist care if it is necessary; and rehabilitation. Moreover, it also adds palliative care (Narasimhan & Kapila, 2020).

Self-care is consisted of actions within an individual's control to manage health, non-communicable and dangerous communicable diseases such as coronavirus disease (COVID-19). The contribution of self-care may also help avoid social stigma, bring improved mental well-being, which is a part of social determinants of health. A role of social determinants of health links health promotion and health equity in the social world (Artiga & Hinton, 2018). It can be noticed that it can applied to COVID-19 by self-care from a social distancing guideline of public health concept until it becomes Thai dictionary word "A new normal" after COVID-19 pandemic crisis.

In Thailand, self-care is an important public health concept because from the Community Health Professions Act, B.E. 2556 from Rama IX, king of Thailand, concluded that public health related to human and environment in area of health promotion, prevention, control disease, primary curative disease, and rehabilitation of the individual, family, and community by holistic health care (Gazette, 2020). In the past, studies found that public health officers of Thailand had experience about infectious diseases such as Avian influenza, Influenza A(H1N1) (Puttawattana, 2020) including studies about Influenza activity in Thailand and its occurrence in different climates to be applied in public health management (Prachayangprecha et al., 2015). In general, a public health concept using self-care instruction (i.e. hand cleaning with 70% alcohol gel, self-isolation, no joining gatherings of large groups of people in various areas, etc) is of critical importance to decelerate virus progression and a part of health promotion including disease prevention. Moreover, it is applied to resolve these infectious diseases by following the public health fundamental based on health promotion and disease prevention, especially, self-care including the World Health Organization recommendation about the COVID-19 pandemic crisis worldwide. These infectious diseases in the past situation of Thailand were not an important crisis. Public health officers could control that situation with public health guideline that focused on self-care issue. Therefore, self-care is important from these reasons to decrease the number of COVID-19 patients in Thailand.

Normally, people should follow self-care strategies until the risk of virus transmission is decreased. In this present period there is still very little scientific data regarding COVID 19 and there is no clarity about its transmission. Previous studies found that COVID-19 disease infected the aging people and adult. Average age of patients was between 30–70 years (87%) (Wu & McGoogan, 2020). In China, a report found epidemiology and transmission of COVID-19 in 391 cases and 1286 of their close contacts in Shenzhen, China. Patients were older than the general population (mean age 45 years). Household contacts and those travelling with a COVID-19 patient were at higher risk of infection. In addition, children were at a similar risk of infection to the general population in this study (Qifang et al., 2020). Due to this reason, public health concept that focused on disease prevention and management using self-care actions based on general

recommendation for other infectious viruses (i.e. MERS) can be a useful solution to stop COVID-19 pandemic in the context of virus spread (CDC, 2020; Wu & McGoogan, 2020). In addition, appropriate self-care actions can be seen as applicable approaches to slow down the COVID-19 pandemic including the improvement of the quality of life i.e., self-isolation, alcohol gel washing etc. (Riegel et al., 2019). Therefore, it can be seen that self-care issue is an important and necessary strategy of public health perspective based on social determinants of health to decrease social discrimination and health promotion including health equity in Thai society following the self-care guideline from WHO recommendations to decelerate COVID-19 pandemic in Thailand and the other countries.

Situation of the coronavirus COVID-19 outbreak worldwide to Thailand

COVID-19, commonly known as coronavirus disease 2019, is a large family of virus and a new strain causing many illnesses leading to a crisis of infectious disease in public health (World Health Organization, 2020). Common symptoms of COVID-19 comprised of cough, fever, sore throat, dyspnea, and tachypnea (World Health Organization, 2020). Normally, it looks like common cold. People ignore their symptoms and do not follow the self-care instructions given in public health perspective.

Situation of the coronavirus COVID-19 pandemic is an important crisis of global health and the greatest challenge for the world. The point of its emergence was Asia (especially, China) in 2019 before it occurred as a pandemic crisis becoming a global health problem (Rhee, 2020). This coronavirus COVID-19 has spread around the world with health effects such as mental health, stress, physical health, and psychosocial health in society. In Thailand, coronavirus COVID-19 outbreak had been ongoing since January 13th, 2020 (Wikipedia, 2020). Its first outbreak was at Wuhan, Hubei, China. On January 12th, 2020, World Health Organization (WHO) reported that a novel coronavirus was the cause of a respiratory illness which it found in a cluster of people in Wuhan City, Hubei Province, China. First case of Thailand which was announced by the Ministry of Public Health, reported a 61-year-old Chinese woman. She is a resident of Wuhan. She had not gone to the Huanan Seafood Wholesale Market, China. Symptoms of this first case comprised a sore throat, fever, chills and a headache on January 5th, 2020. She flew directly with her family and a tour group from Wuhan to Suvarnabhumi Airport, Thailand on January 8th, 2020. After that, laboratory examination found positive coronavirus four days later (Wikipedia, 2020). Later, in Thailand, it became a novel COVID-19 outbreak from increasing gradually to rapidly increasing. The place of origin of COVID-19 outbreak within Thailand was Lumpinee Boxing Stadium, Bangkok where many Thai people assembled to see Thai boxing on March 6th, 2020. Then, the Thai government announced the cancelation of Thai new year festival, known as Songkran festival, (from April 13th-16th, 2020) on March 17th, 2020. On March 22nd, 2020, Thai government commanded to close all department stores and risk areas in Bangkok. The Thai government announced an Emergency Decree with the approval of the Council of Ministers in its meeting on March 24th, 2020 and in accordance with suggestions of the medical and public health administrators and technical personnel, by virtue of Section 5 of the Emergency Decree on Public Administration in Emergency Situations in 2005, regarding an emergency situation in all areas of the Kingdom of Thailand, from March 26th to April 30th 2020 (Department of Disease Control, Ministry of Public Health, Thailand, 2020). Finally, the Thai government announced a curfew on April 3rd, 2020 in all areas of the kingdom of Thailand. Regulation of those laws control all the people who stay in Thailand area such as prohibition from entering or leaving certain areas of Thailand, prohibitions or limitations from entering or departing from the Kingdom of Thailand and the movement of large numbers of people across various areas, control of the use of all vehicles, transportation routes and the control of goods and medical supplies. Moreover, motto of Thai government statement about staying at home “Stay home, Stop the disease, for the nation” was for everybody. Bangkok, the capital of Thailand, has the most of COVID-19 contacted cases.

The objective research is to study about and describe self-care for public health concept regarding the coronavirus crisis in Thailand. Its conceptual framework used public health concept in term of self-care based on social determinants of health (i.e., social distancing, self-quarantine, not joining gatherings of large groups of people in various areas).

Methodology

Methodology in this original article used documentary research from secondary data at CCSA and Department of Disease Control, Ministry of Public Health, Thailand. Period of data collection to show the number of total cases, new infectious cases, remedied cases, hospitalized cases, and death is during April 13th–23th, 2020 with COVID-19 infectious disease. Because on April 13th

there is a Thai New Year festival for which Thai people travelled across provinces or the other countries every year. By contradiction, this Thai New Year festival, 2020 is different from the last year because Thai government commanded people in Thailand to stop traveling, stay at home, self-care following the public health concept of World Health Organization, and Ministry of Public Health, Thailand. The trend for this period of the number of novel COVID-19 cases, death, remedied, and hospitalized cases was recorded by CCSA, and Department of Disease Control, Ministry of Public Health, Thailand. Data analysis represented number of total cases, new infectious cases, remedied cases, hospitalized cases, and death, and description of public health management in Thailand with the novel COVID-19 outbreak used data from Department of Disease Control, Ministry of Public Health, and Department of Mental Health, Thailand, 2020.

Results and discussion

After curfew in Thailand, COVID-19 patients were still found continuously. It is represented in the update on April 13th–23rd, 2020 with COVID-19 Infected Situation Reports in Thailand because the Thai New Year festival, known as Songkran festival started then. The Thai government cancelled this festival and Thai people came back to hometown. Thai government is careful about this festival (Department of Disease Control, Ministry of Public Health, Thailand, 2020) (Table 1). It was found that the number of new cases had decreased gradually which was a good news in Thailand. However, it is still looking ahead to this challenge of COVID-19 outbreak. Thai people expect that the COVID-19 crisis in Thailand will stop and control will come soon (CCSA, 2020).

Data description

This result described in two parts: First part was data description of public health management in Thailand for the novel COVID-19 outbreak, from Department of Disease Control and Department of Mental Health, Ministry of Public Health, Thailand, 2020. Second part explained about self-care recommendations from public health perspective for the COVID-19 outbreak in Thailand which had document data from CCSA and Department of Disease Control, Ministry of Public Health, Thailand, 2020.

First part: Public health management in Thailand for the novel COVID-19 outbreak

First of all public health management is applied to the novel COVID-19 outbreak in Thailand which is a basic concept of public health. It explains public health management during emergency public health crisis especially it has been implemented in the surveillance, screening, and prevention and control measures. These are as follows: Department of Disease Control, Ministry of Public Health, Thailand, 2020; Department of Mental Health, Ministry of Public Health, Thailand, 2020.

(1) Quarantine offices screen arrival and departure passengers in Thailand. They consisted of six airports (i.e., Suvarnabhumi, Don Mueang, Chiang Mai, Chiang Rai, Phuket and Krabi airport), six seaports such as Bangkok, LaemChabang, Chiang Saen, Phuket, Samui and Krabi seaport, and thirty-four ground ports. From reports of Center for COVID-19 Situation Administration (CCSA) of Thai royal government (CCSA, 2020). Result from secondary data found that airport officers attempted to screen

Table 1: COVID-19 Infected Situation Reports during on April 13th–23rd, 2020 in Thailand

Date	Total cases	New infectious cases	Remedied	Hospitalized	Death
13th (Thai new year festival)	2,579	28	1,288	1,251	40
14th (Thai aging day)	2,613	34	1,405	1,167	41
15th	2,643	30	1,497	1,103	43
16th	2,672	29	1,593	1,033	46
17th	2,700	28	1,689	964	47
18th	2,733	33	1,787	899	47
19th	2,765	32	1,928	790	47
20th	2,792	27	1,999	746	47
21st	2,811	19	2,108	655	48
22nd	2,826	15	2,352	425	49
23rd	2,839	13	2,430	359	50

Source: CCSA and Department of Disease Control, Ministry of Public Health, Thailand, 2020

arrival and departure passengers, especially who arrived in Thailand. It still found a few cases of COVID infectious patients. Moreover, there was a case of a Thai airport officer, who was infected by a traveler. It was notified that self-care of the airport officer was not good enough to prevent the disease. However, it can be observed that the airport officer is not a public health officer who was trained to prevent an infectious disease. Results from this point indicated that the Thai government should add public health officer positions in all risk areas in the future because of lack of public health officers who are specialists in the field of public health.

(2) Hospital screening is done to investigate COVID-19 disease in suspected people, for example, in people who have fever with at least one respiratory symptom, and have risk history, pneumonia patients who were suspected to have infection by SARS-CoV-2 (COVID-19) including people who were among the clusters of respiratory system infections with epidemiological linkage. Results from hospital screening showed new infectious cases, given in Table 1. It reported that new COVID-19 patients decreased gradually from 28–13 new patients during April 13th–23rd , 2020. It implied that COVID 19 crisis in Thailand has a good trend.

a. A public health perspective at community level helps to educate people, for instance, when people are stressed and anxious. They should know how to notify local public health officers or the Department of Disease Control (DDC) hotline 1422 or the Department of Mental Health or hotline 1323, Ministry of Public Health, Thailand, when meeting travelers who have a fever with respiratory symptoms (i.e., cough, sore throat, runny nose or shortness of breath and arriving from the disease infected zones or the risk areas announced by the Provincial Communicable Diseases Committee). Those travelers have to allow the officials or health volunteers to investigate COVID-19 disease, monitoring and describing how to self-quarantine. Those self-care processes also represent responsibility toward society and nation. Results from data of Department of Mental Health or hotline: 1323, Ministry of public health, Thailand found that 51.85 % of Thai people called hotline: 1323 to consult about stress and anxiety on March, 2020. It looked like trends of stress and anxiety in Thai people from COVID-19 pandemic crisis would increase in April, 2020. However, it was not recorded in April, 2020 (Department of Mental Health, Ministry of public health, Thailand, 2020).

b. Second part: Self-care recommendations from public health perspective with COVID-19 outbreak in Thailand (Source: CCSA and Department of Disease Control, Ministry of Public Health, Thailand, 2020).

I. Not joining gatherings of large groups of people in various areas such as public sphere, department stores, and meeting because it helped to prevent COVID-19 pandemic crisis again.

II. Please use incremental preventive measures by yourself. Not only do people display social responsibility but people also show self-care. It is necessary to promote public health by self-care and decrease and stop number of new COVID-19 patients. It is known as a new normal of Thailand after COVID-19 pandemic crisis.

III. Surgical masks use is important and necessary for COVID-19 pandemic to be careful of secretion of COVID-19 patients. It is known as a new normal in Thailand after the COVID-19 pandemic crisis.

IV. Prepare and use hand sanitizer gels with 70% alcohol gel to decrease quantum of COVID-19 disease. It is known as a new normal Thailand after COVID-19 pandemic crisis.

V. Should be washing hands with water and soap for at least 20 seconds in every times when people contact with risk case to decrease quantity of disease.

VI. Prohibition from touching eye, mouth, and nose because it risks the secretion of COVID-19 infections.

VII. Advice people to avoid travel to COVID-19 disease infected zones to prevent COVID-19 pandemic disease.

VIII. Social distancing, at least 200 centimeters, to prevent COVID-19 infectious disease. It is known as a new normal of Thailand after the COVID-19 pandemic crisis. Moreover, social distancing is related to social determinants of health which also uses medical, social, public health dimension applications.

IX. Avoid travel to hospital unless it is necessary because it is a risk area.

X. Should eat clean and fully cooked food; especially, hot food to prevent COVID-19 infectious disease because of death from high temperature.

XI. Do not share personal handkerchiefs, glasses and towels with other people because of risk of infected secretion.

XII. Keep your body warm and get enough sleep, at least 6–8 hours per day, which is a health promotion.

XIII. If people have poor mental health, stress, anxiety, and depression from staying at home, contact the Department of Disease Control (DDC) or hotline: 1422 or the Department of Mental Health or hotline:1323, Ministry of Public Health, Thailand, Ministry of Public Health, Thailand.

XIV. Observe symptoms (i.e., cough, sore throat, runny nose and shortness of breath) by self-care after people come back from the other countries to Thailand. People should be in self-quarantine for at least 14 days, as a responsibility to Thai society and health prevention. It is a type of surveillance.

These results contributed some preliminary findings about the growing field of remedied cases, and the decreasing number of new COVID-19 patients and hospitalized cases after self-care guidelines were used to deal with the COVID-19 pandemic crisis of Thailand. The benefit of this article to the readers is the use of the major public health data of Thailand to design and plan the public health policy for disease prevention and health promotion and make decisions about Global Health Security (GHS) with researchers, Thai government and World Health Organization to prevent COVID-19 pandemic re-emerging disease in the future.

Moreover, it can be notified that the number of new COVID-19 patients in Thailand decreased continuously and gradually after using of public health recommendations in the public health concept based on self-care. It is being communicated effectively to the public. This point indicated that public health concept is being communicated effectively to the public via government and private television channels, social media, telephone because Thai people mainly stayed home and self-care guidelines helped to decrease COVID-19 cases. Therefore, self-care in the public health concept is a major advantage practiced in the context of COVID-19 spread in Thailand.

This article is updated and significant for the current COVID-19 pandemic crisis in Thailand and this is the strength of the article. However the data is limited and not sufficient to do a deep study. The weakness of this article is that it still does not focus on statistical information in an acceptable level for the public in its effectiveness in the coronavirus crisis in Thailand to reduce the spread because it still is not the final data in this period. It is only a cut-off point of secondary data in this study but it showed the number of new COVID-19 patients in that period. It should be studied the next time because mostly, data came from CCSA, the Department of Disease Control (DDC), and the Department of Mental Health, Ministry of Public health, Thailand which were secondary data. Epidemiological data of COVID-19 patients in Thailand is not the final report because the COVID-19 pandemic crisis is still happening. Since, due to time limitation, it is difficult to present complete information here but preliminary results show that self-care guidelines (i.e., mask using, self-isolation, social distancing, hand washing, avoid travelling etc) for the public health concept for the coronavirus crisis in Thailand are important to reduce the COVID-19 pandemic crisis of Thailand. Also some data suggest that the number of new patients decreased after Thai people followed self-care guidelines in their lifestyle from the end of March, 2020 up to now. Public health officers and the Thai government cooperated for this announcement. Thai people expected that the COVID-19 pandemic crisis will be controlled and normal public health will return.

Conclusion

The Thai government announced an emergency situation in all areas of the Kingdom of Thailand, from March 26th–June 15th 2020, and curfew later for COVID-19 pandemic crisis, which is, in current time, one of the biggest crises of global health and the greatest challenge with the world. Self-care for public health concept for the coronavirus crisis in Thailand comprised of 14 guidelines which is not difficult to process. Moreover, there was a continuous decrease in new COVID19 patients gradually according to secondary data of Ministry of Public Health, Thailand on April 13th–23rd, 2020 after curfew in Thailand. However, limitation of this study is its unclear statistic data of the acceptable level by the public, its effectiveness in each item from secondary data of Thailand that it should be studied in the next time because it is not final information. Epidemiological data of Thailand is not the final report because COVID-19 pandemic crisis is still in appearance up to now. It can be observed that the number of new COVID-19 cases of Thailand reduced after Thai people practiced self-care guidelines in their lifestyle (such as, mask using, self-isolation, social distancing,

hand washing, and avoid travelling). This point indicated that self-care in public health concept for the coronavirus crisis in Thailand is able to reduce coronavirus patients in Thailand with the decreasing of number of new cases after self-care recommendations with the announcement of public health officers and Thai government. The usefulness of this paper to the readers is to apply and create public health policy using the fundamental public health information. In addition, it contributed to make decisions to prevent COVID-19 pandemic from re-emerging as a disease. As per the motto of Thai government, that people need to "stay home, stop the disease, for the nation" to reduce the number of COVID-19 pandemic crisis in Thailand. If people in Thailand follow the social norms, and help each other with self-care in the public health perspective for COVID-19. Life will be expected to return to a normal public health situation soon.

Competing Interest Statement

All authors have read and approved the manuscript and take full responsibility for its contents. The authors have declared that no competing interest exists.

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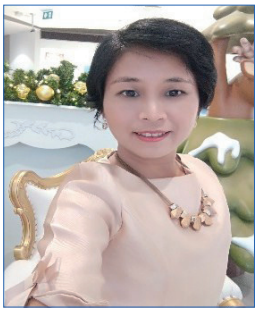
Biographical Statements of Authors



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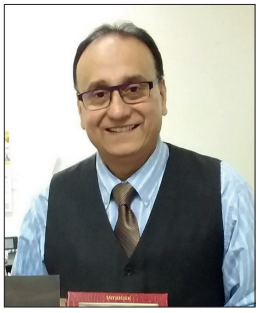

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ORIGINAL ARTICLE

The Coronavirus Pandemic and Tourism in Southeast Asia: Case Material from Malaysia

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ABSTRACT

During the past two decades there has been a substantial literature published on a range of crises in Southeast Asia and how these have affected the tourism industry in the region. These crises comprise natural and environmental disasters, epidemics and pandemics, drastic downturns in the world economy, and terrorism and political conflict. The latest peril is the Coronavirus (COVID-19) pandemic; it has especially serious consequences for tourism development. Since the SARS epidemic of 2002-2004 the Southeast Asian economies have become increasingly integrated into those of East Asia; specifically, China's contribution to tourism in the Association of Southeast Asian Nations (ASEAN) has grown exponentially. In this paper some of the most significant literature on crises and tourism in Southeast Asia is examined, with a focus on the East Asian market taking case material on the impacts of the pandemic on one particular part of Malaysia, the state of Sabah, which has enjoyed substantial success in attracting Chinese and Korean tourists to northern Borneo. Some of the policy and practical responses to the effects on the tourism industry are also considered.

Keywords: Coronavirus, tourism, crises, impacts, responses, Southeast Asia, Malaysia, Sabah.

Introduction
The global and Southeast Asian context

Relationships between crises and tourism in Southeast Asia require urgent examination in the context of the current Coronavirus pandemic. Using case material on the impacts it is having on Malaysia and its northern Borneo state of Sabah in particular, this study reveals some of the main issues raised by the pandemic and considers some of the responses to what is a multidimensional crisis. One major factor affecting the region is the collapse in the East Asian market, especially China and to a lesser extent South Korea, Taiwan and Japan, and due attention is paid to the implications of the increasing interdependence of Southeast and East Asia, of which Sabah is a prime example. In this introduction the complex interactions between crises and tourism are addressed, the importance of tourism to the Southeast Asian economies, and some of the overall consequences of the current pandemic on the tourism industry.

Tourism, crises and Southeast Asia

The global tourism industry is especially sensitive to changes which affect safety, health and security. If tourists perceive undue risk or uncertainty then they will usually avoid sites which are seen to threaten their well-being. However, there are two important elements in tourist decision-making on whether or not to visit a site, country or region; these are both the existence of a real threat to personal safety and well-being and also the perception, anxiety, even fear that the destination poses a threat (Mansfeld & Pizam, 2006; and see Breda & Costa,

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2006). Tourism is also a system of interrelated processes and forces; it is affected by the local, regional and global political, economic, social and environmental context within which it is situated, and, it, in turn, has effects on the polities, societies, cultures, economies and environments within which it is embedded (King, 2018). This is clearly reflected in the current Coronavirus pandemic.

By definition tourism requires travel, encounters with other places and people, and the facilities and infrastructures which enable the pursuit of leisure, curiosity, and new experiences and learning opportunities. Restrictions and outright bans on travel, on entering, exiting and transiting different countries, and on social and cultural interaction with others have profound consequences for the tourism industry. Its purpose and the basis on which it functions are removed. The major sub-sectors of the industry, including airlines and other forms of transport, accommodation, the providers of food and beverages, retail outlets, tour operations and sightseeing packages, guiding and entertainment services are all placed in jeopardy. The World Travel and Tourism Council (WTTC) has projected a possible global loss of jobs at 50 million in 2020 as a result of the pandemic, a recovery period of almost a year after the outbreak and, in the Asia Pacific region, the worst affected area, a decrease has already occurred in international air travel bookings, both inbound and outbound, at over 40% in the year to March 2020 (WTTC, 2020a, 2020b). Most recently the WTTC has revised its estimates upwards, and projects that job losses could be as many as 100 million in 2020, around 63% of those losses in Asia, and reduction in GDP worldwide is projected at US$2.7 trillion, with over US$1 trillion being lost in Asia (2020c).

The Coronavirus pandemic has already had and will continue to have an enormously disruptive effect on the global economy in terms of growth and employment. The World Bank has recently warned that poverty levels will increase, with a negative effect on social and economic well-being. In April it put in place a plan to suspend the debt of the world's poorest countries to enable them to deploy measures to combat COVID-19 (Express, 14 April 2020). The depth and duration of the shock and the extent of negative impacts are currently indeterminate.

At the time of writing (17 May 2020), 213 countries and sites have recorded cases of Coronavirus infection. The countries of Southeast Asia have a total of 65,365 cases, while deaths stand at 2,104 (Worldometer, 2020). These figures change day-by-day, even hour-by-hour, and they are in any case very likely to be underestimates across the ASEAN region, particularly in such countries as Vietnam, Cambodia, Lao PDR and Myanmar where together only 610 cases have been listed so far, with six deaths in these four countries which had a total population of around 180 million in 2019. In close proximity to China with close interrelationships through tourism and economic activities, it seems unlikely that these figures for mainland Southeast Asia give us anything like the true picture. Those countries recorded as most afflicted have more efficient and open systems of data collection (Singapore, Indonesia, Philippines, Malaysia and Thailand); and it should be noted, they also have large, well-established tourism industries. But even there, with the exception of Singapore (and Brunei Darussalam), all cases and deaths have probably not been included in the statistical count.

To provide some sense of the scale of the problem in the tourism industry the WTTC calculated that, in 2019, tourism contributed US$ 8.9 trillion (10.3%) of global Gross Domestic Product (GDP) (2020a). It provided 330 million jobs (1 in 10 of global employment), US$ 1.7 trillion in visitor exports (comprising 28.3% of global services exports), and US$ 948 billion (4.3%) in global capital investment (2020a). In its 'Monthly Economic Impact' report for January 2020 the WTTC states 'A huge dependence on Chinese tourists sees many Asian countries reeling from China's move to cancel outbound group trips indefinitely' (2020b, p. 3). Of Thailand's international tourist arrivals in 2019, for example, 30% were Chinese, and the Tourism Authority of Thailand (TAT) estimated potential losses of US$ 1.6 billion for 2020; this figure will rise given uncertainties about the duration and extent of travel restrictions and lockdowns. The annual growth in international tourist arrivals in 2019 in selected ASEAN countries, which have become increasingly tied to the East Asian market, ranged from 40.2% in Myanmar, through to 16.2% in Vietnam, 15.1% in the Philippines, 11.5% in Lao PDR to 9.7% in Cambodia (2020b, p. 4). The established destinations of Malaysia, Thailand, Singapore and Indonesia, which had already attracted large numbers of East Asian visitors, showed smaller percentage increases.

ASEAN and Tourism Development

In the context of ASEAN, the tourism industry is of particular importance to the economies of its constituent states, with the exception of Brunei Darussalam. It is an important vehicle for regional cooperation and supports and promotes cultural and environmental heritage and diversity. It is also undoubtedly a major force for economic growth and regional development in marginal areas (Chheang, 2013). The WTTC provided a figure for

2019 of US$380 billion generated by tourism in ASEAN contributing 12.1% to overall regional GDP (WTTC, 2020a)

Total number of visitor arrivals to ASEAN increased significantly during 2005-2018, reaching 135.3 million in 2018 – or an increase of 263.7% from 2005. The highest visitor arrivals in 2018 were achieved by Thailand (38.3 million), followed by Malaysia (25.8 million), Singapore (18.5 million), Indonesia (15.8 million), and Vietnam (15.5 million). Then some way behind came the Philippines (7.1 million), Cambodia (6.2 million), Lao PDR (4.2 million) and Myanmar (3.55 million). It should be noted that Cambodia, Lao PDR and Myanmar have developed their tourism industries from a very low base, and these industries play a most important role in their respective economies. Given its oil and gas wealth, tourism in Brunei Darussalam contributes a very small percentage to GDP and its arrivals only reached 278,000 in 2018. Nevertheless, this figure only includes arrivals at the international airport and not by land, ferry or cruise ship. Of the overall total visitors to ASEAN, 49.7 million (36.7%) in 2018 came from within ASEAN, an increase of 212.2% from 15.9 million arrivals recorded in 2005 (The ASEAN Secretariat, 2019a, 2019b, pp. 163-179).

The more remarkable statistics are those which provide the country of origin of visitor arrivals. Of the 85.6 million non-ASEAN arrivals in 2018, 47.9 million were generated in East Asia (China [29.1 million]; South Korea [9 million], Japan [5.2 million], Taiwan [2.8 million] and Hong Kong [1.8 million]) (2019b, p. 168). Some ASEAN countries are very dependent on East Asian visitors, with Thailand receiving approximately 15.5 million visitors in 2018, two-thirds of those from China (2019b: 178). Malaysia is less dependent but nevertheless received 4.3 million visitors from East Asia (2.9 million from China) (p. 174). Within Malaysia the state of Sabah received 999,851 visitors from East Asia in 2018: with almost 600,000 from China and 340,000 from South Korea (Sabah Tourism, 2019). Its image as 'The Land Below the Wind' and its landscapes, forests, wildlife, islands, beaches and cultures, currently promoted as 'Enchanting Sabah', have proved major attractions for East Asians. (Sabah Tourism Board, 2020a)

Every ASEAN country has a government body or bodies responsible for the administration and promotion of tourism development (ministries, departments, boards); in some cases tourism is combined with culture (Lao PDR); or culture and sports (Vietnam), or sports (Thailand), or arts and culture (Malaysia), or the creative economy (Indonesia); in others it is located within trade, industry or primary resources (Brunei, Singapore) or an economic sector like hotels (Myanmar); in the remaining two countries, tourism comprises a free-standing Ministry (Cambodia) and an Executive Department of Tourism (Philippines). Moreover, at the 46th meeting of the ASEAN Tourism Ministers and National Tourism Organisations in January 2017, four committees were established to coordinate regional tourism: Tourism Competitiveness; Sustainable and Inclusive Tourism Development; Tourism Resourcing, Monitoring and Evaluation; and Tourism Professional Monitoring. More importantly ASEAN plans tourism on a regional basis expressed in two important documents which contain a wealth of statistical and empirical material: the *ASEAN Tourism Strategic Plan*, the first one operated between 2011 and 2015, and the current plan runs for a ten-year period, 2016-2025 (The ASEAN Secretariat, 2015a); and the *ASEAN Tourism Marketing Strategy*, launched in 2012-2015 with the current plan operating from 2017 until 2020 (The ASEAN Secretariat, 2017). In addition, the first Visit ASEAN Year was held in 1992 and Visit ASEAN@50 Golden Celebration was organised in 2017 to mark 50 years since the founding of the Association in 1967. The ASEAN Tourism Ministers held their first meeting in Surabaya in 1996.

Apart from sun, sea, sand, shopping, sight-seeing and, in some countries, sex, in all countries of the region culture and heritage are seen as important elements in tourism activities, for both domestic and international tourists (museums, artistic productions, and the creative economy, material culture, archaeological sites, monuments, historic urban areas, natural and cultural landscapes, religious sites and pilgrimages, and living cultures [performance, dance, music, theatre, ritual, ceremony, folklore, sports and games]). Another major attraction is nature, landscapes and ecotourism (parks, reserves, animal sanctuaries, rivers, reefs, lakes, mountains, islands, and forests). In a 1984 Declaration the ASEAN Ministers responsible for the environment created the ASEAN Heritage Parks programme, administered by the ASEAN Centre for Biodiversity. In 2019 there were 49 parks devoted to conservation and the protection of biodiversity and unique natural environments; seven of these are also UNESCO World Heritage Sites. ASEAN also inscribes Biosphere Reserves of which there are now 35 main sites and 82 tentative sites, including many national parks (The ASEAN Secretariat, 2018, 2019c, 2020).

It is worth noting too that, although ASEAN sees tourism as a vehicle for regional cooperation, and its main objective is to promote the region as a single tourist destination, there is competition and sometimes conflict between the Association's constituent members. There continue to be the established players in the field (Thailand, Malaysia, Singapore); Indonesia over recent

years has not achieved the visitor arrival targets that it has set, and the Philippines for many years, beset by typhoons, floods, earthquakes and volcanic eruptions has failed to keep pace with some of its neighbours. Instead in 2018 over 29 million visitors went to the emerging markets of Vietnam, Cambodia, Lao PDR and Myanmar (this trend continued into 2019). Again, the proximity of mainland Southeast Asia to the East Asian markets is a factor. But the exploration of new tourist destinations, easier and cheaper access and value for money must also play a role in tourist decision-making. On the other hand, Singapore, Bangkok and to some extent Kuala Lumpur have increasingly served as regional hubs for these newer markets and their stopover traffic has increased.

Another observation on the more problematical side of ASEAN's role in addressing transnational crises in the region is in regard to the regular occurrence of forest fires and the burning off of vegetation for planting oil palm and other commercial crops. The Association has been unable to solve this problem over the years, and one effect of the 'Haze' and burning in Sumatra and Borneo has been the disruption of air travel and the more general impact on the tourism industry in Indonesia, Malaysia, Brunei and Singapore (Cotton, 1999; Varkkey, 2016). From February to September 2019 the problem even spread as far as Thailand, Vietnam and the Philippines.

Before going on to examine some of the literature on disasters and tourism, we should indicate that the *ASEAN Tourism Strategic Plan* in considering constraints, challenges and threats to the tourism industry mentions in passing, and without elaboration, 'possible pandemics with resultant negative travel advisories' (2015a, p. 26). The ASEAN Secretariat does have a Crisis Communications Manual which provides a standardised 'Communications Toolkit' to address the ways in which media messages and communications strategies can be handled, devised and delivered, and reputations and images sustained and stakeholders and the general public reassured (2015b). However, it is not a particularly useful aid to respond to a region-wide and global crisis such as COVID-19 in which each country implements its own solutions to the crisis. In a rather delayed response to nation-state-based responses, the ASEAN Tourism Ministers conducted a video conference, reported on 4 May 2020, to deepen cooperation. This was to avoid projections that the ASEAN tourism industry might take five years to recover from the pandemic if the region did not coordinate its actions and share information on such matters as travel restrictions, entry and transit through airports and passage across land borders (TTG Asia, 2020).

Crises and Tourism in Southeast Asia: Literature, Materials and Methods

The distinction between 'crisis' and 'disaster' is problematic. Broadly a crisis is 'a time of great disagreement, confusion or suffering'; 'an extremely difficult or dangerous point in a situation' (Cambridge Dictionary, 2020). Thus, it is a testing time of stress, instability, insecurity and danger which points to a breakdown in or change from what is considered to be 'normal' activities, behaviours and processes. 'Disaster', on the other hand, is usually viewed as a change in human affairs that is 'sudden', unpredictable, and drastic or catastrophic in its consequences and over which there is very little, if any possibility of exercising control. Rather than human-generated, the term 'disaster' usually covers such natural events as earthquakes, volcanic eruptions, floods, storms, tsunamis, and landslides; sometimes these are also defined as catastrophes or emergencies with sudden loss of life and property (Rindrasih et al., 2019, pp. 95-96).

Crises and disasters affecting the tourism industry in Southeast Asia are not new, but given, the increasing regional integration within the Association of Southeast Asian Nations (ASEAN) and its incorporation into the economically advanced nations in East Asia then their impacts tend to be magnified and spread transnationally (Scott, 2020). Ahmad Puad Mat Som and Benjamin Aguenza categorise crises into health crises (SARS [Severe Acute Respiratory Syndrome], HPAI [Highly Pathogenic Avian Influenza] [H5N1, H1N1]); natural disasters (tsunami, Indonesian volcanic eruptions, climate change); crises generated by terrorism and political instability (Bali bombings, Jakarta bombings); global economic downturns and financial crises (in 1997-1998, 2008-2009) (2013, p. 4).

There is a considerable literature on crises and disasters and the consequences for the tourism industry in Southeast Asia as well as more general texts on managing these in the Asia Pacific region and beyond (see, for example, Henderson, 1999a, 1999b, 2002, 2003, 2004, 2007; Henderson & Tran Hai Linh, 2007; Ritchie & Campiranon, 2015). In this paper, as two researchers who have been involved in tourism studies in the region for over 30 years, we focus on primary and secondary literature and on current online materials, news reports and releases, briefings, and government and official data, to provide an overview of crises and disasters in Southeast Asia, their relationship to the tourism industry, and the specific impacts of the Coronavirus pandemic on tourism. A major concern is the consequence of the increasingly close relations between East Asia and Southeast Asia in the context of a major regional and global crisis.

The paper is not concerned so much with strategies and management issues in countering the pandemic, though it does address some of the major responses on the part of government and the tourism industry (in our case study of the state of Sabah, Malaysia). One matter is very clear in the current Coronavirus pandemic and that is that the planning for a crisis of such magnitude and extent, and the devising of measures to counter the effects of a disease that has spread with such speed and severity, are fraught with all kinds of difficulties in decision-making, choice, strategy, resources and in the lack of knowledge of the virus and its properties. In the studies of management in relation to disasters much is made of forward-planning, the formulation of strategies and a communications plan, ensuring that resources and funds can be mobilised quickly and efficiently, the coordination between the private and public sectors involving both tourism and non-tourism stakeholders, and close cooperation between national government bodies and transnational tourism, relief and aid organisations. However, in the case of the pandemic, even this kind of preparedness might not have been sufficient to address the consequences of the rapid way in which the disease has spread and mutated, and its highly infectious nature which has overwhelmed health services and social care facilities, and the fact that carriers, some of them referred to as 'super spreaders' may be asymptomatic. The fact that there is currently no vaccine and remedy to counter the virus is a further weakness in any strategic planning and management of the impacts of the disease.

The focus on regional integration in the tourism industry also inevitably leads to the need to undertake comparative analyses of different disasters and the varied consequences of the same disaster in different places. This comparative approach has been pursued within as well as across countries (see, for example, Neef & Grayson, 2019; Rindrasih, et al., 2019). We can capture the range of crises in Southeast Asia in the context of Thailand. Erik Cohen, for example, in his work on Thailand made the distinction between crises which are exogenous to a given country or region and whose effects are more widespread and those which are endogenous and are primarily confined to one country (though again the effects might be felt in certain neighbouring countries) (2010, pp. 281-296; 2012). Cohen examined the impacts on the tourism industry in Thailand from the 2004 tsunami which affected a ring of countries around the Indian Ocean, including Indonesia (which was worst hit), and Malaysia. He compared this with the civil conflict in Thailand surrounding the then Prime Minister, Thaksin Shinawatra, and the occupation of Bangkok airports in 2008. He argues that the aftermath of the tsunami could be controlled and better managed because it did not affect the political centre and the political elite of the country in Bangkok. Relatively quickly the tourism industry and the country responded to the challenges. On the other hand, though the Bangkok crisis of 2008 was less severe in terms of loss of life and physical damage, it went to the heart of Thai politics and the conflict was unable to be resolved in the short term, and it was to continue until the military coup of May 2014 and beyond.

Kontogeorgopoulos says of the 2014 coup 'The curfew, international publicity about the coup, and the sight of military personnel in popular tourist sites scared off potential tourists and temporarily halted the rapid growth of tourism in Thailand' (2016, p. 161). It was estimated that GDP declined by 6.6% in 2014, mainly as result of the decrease in tourism activities. However, Kontogeorgopoulos qualifies this by suggesting that tourism bounces back, as it always has in Thailand since 1970, given the resilience of the industry (2016, p. 161).

Nevertheless, what is interesting about the current pandemic is that it coincides with yet another episode of political tensions in Thailand. The elections in 2019, which were hardly transparent and appropriately administered and monitored, brought back Prime Minister Prayut[h], who had led the military junta from 2014 to 2019; he returned as a 'civilian' Prime Minister in 2019. In late March 2020, his imposition of emergency rule, the introduction of a curfew from 10pm to 4am, the further restrictions on movement and the censorship of the media, when coupled with the economic downturn occasioned by the pandemic, might be part of another occurrence of 'coincidental' crises, which leads to further political turmoil in the country (Asia Times, 2020).

Cohen and Mark Neal then went on to examine 'coinciding crises' in Thailand. These comprised the 2008-2009 economic meltdown, which was generated in the US housing and loan market, and the escalating political crisis in Thailand. The interaction between the two arenas worked to form a 'mega-crisis'. Its expression was in 'the spectacular occupation of Bangkok's two airports by the opposition to the government in November 2008'. It resulted in a prolonged drop in tourist arrivals which took some time to recover (2010, pp. 455-475).

Thailand provides an appropriate case in Southeast Asia of the interactions between crises and their effects on the important tourism industry in the country. This is for the simple reason that there have been several crises during the past two decades or so, some sequential, some coincident; the 1997-1998 Asian financial crisis which began in Thailand and then spread to other Asian

countries (King, 2001; Henderson, 2002); the tsunami of 2004 with a death toll in Thailand of 5,395, and 2,845 missing (Athukorala & Resosudarmo, 2005; Calgaro & Lloyd, 2008; Falk, 2015; Ozer & de Longueville, 2011); the SARS epidemic in the same year which, although not serious in terms of death-rates in Thailand, gave rise to the perception that several countries in Southeast Asia were part of a 'SARS zone' (Curley & Thomas, 2004); the Bali bombings (see below) of 2002 and 2005 also gave rise to fears on the part of some tourists that Indonesia, Malaysia, Singapore, Thailand and the Philippines ran the risk of further attacks in 'a terrorist zone'; the ongoing political crises commencing in 2005 generated especially by the military coup against Thaksin Shinawatra in 2006, the open conflicts and political protests of 2008-2010, the military coup against Yingluck Shinawatra in 2014, and currently the political tensions surrounding Prayut[h] Chan-ocha's government and his recent declaration of a state of emergency (Asia Times, 2020; Reuters, 2019; The Diplomat, 2020); the global financial crisis of 2008-2009 (Helleiner, 2011); and the Bangkok floods which occur regularly, but were particularly severe in 2011, and led to the inundation of 28 provinces in the central plains region, a significant loss of life, damage to extensive areas of agricultural land and property and a negative impact on the tourism industry (Ghaderi et al., 2011; Cohen, 2012).

Other countries in Southeast Asia also experienced some of these disasters, and others internal to the country. Generally, they were not so frequent or prolonged as in Thailand, though Indonesia comes close and has also had serial and coinciding crises. The Asian financial crisis of 1997-98 was a major factor in the downfall of President Suharto and the political turmoil that was generated at that time, followed soon after by the Bali bombings in 2002 and 2005 (Suparwoko, 2012). Serious setbacks in the tourism industry were experienced by Bali following the terrorist bombings. There was a dramatic decrease in tourist visitors to Indonesia, especially from established source areas like Australia and other Western countries (I Nyoman Darma Putra and Hitchcock, 2006, 2009; Hitchcock and I Nyoman Darma Putra, 2005, 2007; Henderson, 2003). Yet these did not interact with other crises at the time, although Indonesia, but more particularly the island of Sumatra, suffered badly from the tsunami in 2004. The December 2017 eruption of Mount Agung also led to a brief downturn in tourism with hotel occupancy rates falling by between 20-30% in Bali's peak season; Balinese tourism industry workers also suffered a significant decrease in income (Rahmawati et al., 2019).

In the Federation of Malaysia there has been some political turmoil with the departure of Prime Minister Datuk Seri Najib Razak on corruption charges and the abuse of power, and the return of Tun Dr Mahathir Mohamad, followed by his resignation on 24 February as the Coronavirus began to emerge. The succession of Tan Sri Muhyiddin Yassin as Prime Minister does not amount to the kind of political crises experienced in Thailand, significant enough to escalate the effects of the Coronavirus. Nevertheless, in introducing a stringent lockdown from 13 March under the Movement Control Order (MCO) and three economic stimulus packages in March and April in addition to the first package under the previous Prime Minister, it represents a testing time for the new Prime Minister in his attempts to establish his legitimacy; it also marks the introduction of a degree of political authoritarianism in Malaysia (Wong, 2020).

Coronavirus, Southeast Asia, Malaysia and Sabah

Southeast Asia

Space does not permit a detailed discussion of the regional context in which Malaysia is situated in regard to the recent pandemic. However, as with other parts of the world the predictions for the economies of Southeast Asia, particularly in the tourism industry, are bleak. Regular live updates on the pandemic and its effects are posted in *ASEAN Briefing* (2020) and in such a fast-moving contagion it is impossible to capture day-to-day events and developments, the ever-increasing record of new cases, deaths and the spread of the infection, and the measures that governments and the tourism industry are taking to address a deteriorating situation. Some countries in the region are reporting more cases and deaths than others, but it must be emphasised that, without widespread testing, tracking, tracing, diagnosis and recording it is impossible to calculate the real extent of cases and deaths.

All reports from the press and expert and regional commentators on Southeast Asian affairs and on the tourism industry are uniformly pessimistic on the outcomes over the next few months with such headlines as 'Coronavirus exposes cracks in south-east Asian economies' (Reed and Palma, Financial Times, 2020), 'Coronavirus and Southeast Asia: Can catastrophe be avoided? (Maude, Asia Society Policy Institute, 2020), 'Coronavirus: effect on Asian tourism will carry into 2021, experts say' (South China Morning Post, 2020), and 'Southeast Asian tourism likely to be worst hit due to Coronavirus, says GlobalData' (GlobalData, 2020). The *ASEAN Briefing* service documents the increasing strengthening of restrictions and bans on international and domestic travel, and on the

conduct of everyday life, gatherings, and shopping and recreation. As an example of this tightening of controls, the *Briefing,* in the case of Thailand, records the curfew introduced by the Prime Minister for April, and in the Philippines and Malaysia, the increasing role of the police and military in ensuring that government orders and regulations on 'lockdowns' are followed. Michael Vatikiotis has also drawn attention to the intervention of the military in the COVID-19 crisis in Indonesia, through the appointment of Lieutenant-General Doni Monardo to head the special COVID-19 task force, and similar evidence of the military coordination of the response in Myanmar (2020). He suggests that this might be the prelude to the return of military rule in various countries in Southeast Asia, or, at least signal a move towards increasing authoritarianism.

Malaysia

Tourism has become one of the major sectors of the economy and provides a large component of Malaysia's Gross Domestic Product (GDP). The Malaysian Tourism Promotion Board calculates the contribution of tourist expenditure to the GDP in 2018 as RM84.1 billion (US$19.3 billion), a 2.4% increase from 2017, which amounted to 13.3% of GDP. Employment in the industry also reached 2.217 million, 14.7% of the working population. International visitors totalled 25.8 million; the top ten source countries were all Asian (Singapore, 10.6 million; Indonesia, 3.28 million; China, 2.9 million; Thailand, 1.9 million; Brunei, 1.38 million; South Korea, 616,783; India, 600,311; Philippines, 396,062; Japan, 394,540 and Taiwan 383,922 [some figures are rounded up]). ASEAN countries provided 70.1% of all visitors with East Asia providing a further 8.7% (Tourism Malaysia, 2019a). From January to September 2019 as compared with the same period in 2018 tourist expenditure was up 6.9% and visitor arrivals 3.7% (Tourism Malaysia, 2019b).

From January 2020 the Chinese began to cancel group packages to Malaysia, and Malaysia suspended visas for Chinese tourists from Hubei on 27 January and then extended this to other provinces in February , and the government imposed the Movement Control Order (MCO), with a combination of quarantine, closures of non-essential shops and businesses, work-from-home, social distancing and internal and external travel restrictions from 18 March. As a result, visitor numbers and tourist expenditure slumped dramatically. The planned Visit Malaysia Year 2020 was cancelled on 18 March, further restrictions were introduced and then various measures were introduced to support the rapidly declining economy (Tourism Malaysia, 2020). GlobalData projects a loss of revenue in each of the largest tourist destinations of Thailand, Malaysia and Singapore of between US$3 and 6 billion this year (2020). The outbreak of COVID-19 has already hit Malaysia's tourism sector hard, with an expected loss of RM3.37 billion (US$773.8 million) within the first two months of the year (Dzulkifly, 2020).

The Malaysian Economics Stimulus Package

Several immediate government and tourism industry initiatives have been implemented. The economic stimulus package of RM250 billion (US$57.5 billion), introduced in February focuses on tourism, consumption, and investment aimed at stimulating domestic tourism (Rahim, 2020). Then, the second RM20 billion (US$4.8 billion) package was disclosed to help mitigate 'the cash flow crunch, assist those severely impacted, and stimulate demand for travel and tourism' following the suggestions of the Malaysian Association of Tour and Travel Agents (MATTA). The packages assisting the reduction of major business overhead expenses included discounts for electricity bills; lowering the minimum contribution to the Employees Provident Fund (EPF); exemption from the Human Resource Development Fund; provision by banks of financial relief with payment moratoriums comprising restructuring and rescheduling loans; special loans for SMEs for working capital; lowering rents by property-owners; matching grants for tourism personnel training; enhancing digital skills and marketing through subsidies; and introducing personal income tax relief of up to RM1,000 (US$ 232) on expenditure related to domestic tourism (MATTA, 2020).

On the other hand, a review by the Travel and Tourism Research Association (TTRA) indicated that MATTA, the Malaysian Association of Hotels (MAH) and the Malaysian Association of Convention and Exhibition Organisers and Suppliers (MACEOS) were unhappy with the economic stimulus package. Simply, the RM250 billion provides relief to individuals and businesses; and the additional RM20 billion is aimed at fiscal stimulation. According to Tourism Associations and SMEs, both packages fail to address the issue of job retention, cancellations of event businesses and the fundamental needs of SMEs. Consequently, they may result in companies having to lay off employees in order to stay in business which will have long-term ripple effects on other industries. Indeed, the event business industry has already accumulated an estimated loss of RM1.5 billion (US$ 345.2 million), with 53 business events cancelled, while another 57 events have been postponed indefinitely (TTG Asia, 2020). A further

two 'topping up' packages were announced on 27 March and 6 April (Wong, 2020).

Also, there are several operational issues raised in the implementation of stimulus packages. Firstly, the Federal Government has to optimise the resources available and coordinate with the State Governments in implementing the stimulus packages effectively, the efficient delivery of funds, the delivery medium, and identifying target groups. Several assistance programmes in the stimulus packages such as deferment of EPF contributions and staff retention subsidies are subject to meeting criteria and approval which delays the whole process through unnecessary bureaucracy. Furthermore, it was found that the existing data system recorded the specific category of low-income people, and excluded groups such as freelance tour guides, self-employed small rural businesses and daily workers who need immediate financial assistance.

Sabah and Coronavirus

Sabah and Tourism

Tourism is Sabah's third largest economic sector in terms of revenue and employment behind oil and gas production and agriculture. Directly and indirectly it employs 23% of the labour force and generated over RM 8 billion (US$ 1.85 billion) in 2018 (Sabah Tourism, 2019).

Visitor arrivals to Sabah and the growth in tourism, particularly generated by the East Asian market, have shown significant increases since 2010. Then, total arrivals were 2,504,669; of these 1,708,716 were from West Malaysia and Sarawak whilst 795,954 were international visitors. Of the latter, 227,751 came from East Asia (including 43% from China and 25% from South Korea, and the remainder from Taiwan, Japan and Hong Kong) (Sabah Tourism Board, 2020a). In 2015 total arrivals were 3,176,226, with 978,426 international visitors (see Table 1). By 2019 overall visitor arrivals were 4,195,903 with domestic Malaysian visits comprising 2,726,428. But the dominance of East Asia in the international visits of 1,469,475, had increased by more than four times the 2010 figure to 1,065,211 (China, 598,566; South Korea, 396,660, Japan, 24,435, Taiwan, 45,550) (Sabah Tourism Board, 2020b). In addition, 95% of arrivals come by air, and though there are scheduled flights by national airlines (Malaysian and East Asian) and several budget flights run by such carriers as Air Asia, most are chartered flights, particularly from China and South Korea.

Table 1: Domestic and international tourist arrivals 2015-2019

Year	Total Domestic arrivals	Total International tourists	Total tourist arrivals
2015	2,197,800	978,426	3,176,226
2016	2,299,132	1,128,776	3,427,908
2017	2,449,556	1,235,178	3,684,734
2018	2,517,846	1,361,567	3,879,413
2019	2,726,428	1,469,475	4,195,903

Source: Sabah Tourism Board, (2020b), sabah.tourism.com/statistics/?locale=en)

In terms of tourist profile, the 2019 data show that tourists visit Sabah mainly for recreation (86%) followed by visits to friends and relatives (VFR) 5%, then business / work (3%). The majority prefer hotels and resorts for accommodation. There is a range of good quality hotels from budget to five-star (Sabah Tourism Board, 2020c). Since 2015, the state government also recognised rural and community-based tourism as crucial components in the extension of tourism development from Kota Kinabalu. Rural areas on the West Coast of Sabah and offshore islands provided new tourism sites including the Mantanani islands to the north-west of Kota Belud, and Gaya Island and Tunku Abdul Rahman Marine Park, eight kilometres by boat from Kota Kinabalu. Two of the popular resorts for 'sun, sea and sand tourism', a short distance onshore from Kota Kinabalu, are the Shangri-La Tanjung Aru and Sutera Harbour complexes.

Aside from recreational tourism the other major attractions for ecotourists comprise the UNESCO World Heritage Site of Mount Kinabalu National Park, the Sepilok Orangutan Rehabilitation Centre and the Bornean Sun Bear Conservation Centre near Sandakan as well as the wildlife and forest reserves on the Kinabatangan River area in eastern Sabah.

Sabah tourism and crisis

The recent downside for Sabah in the context of the Coronavirus pandemic from late January 2020 is that the state is much more exposed than the neighbouring Malaysian state of Sarawak to the dramatic decline in East Asians travelling abroad. With over one million visitors to Sabah from East Asia in 2019 the impact of their loss to the local tourism industry is already substantial. In the first two months of 2020 international tourist arrivals had decreased by 161,586 (a 35.4% decline), largely due to the collapse of the East Asian market, and all visitor arrivals, including domestic tourists, declined by 567,108 (comprising an overall 16.4% decrease) (Sabah Tourism Board, 2020b). As a result, employees across all tourism sectors have been asked or forced to take annual, unpaid

or half-paid leave or have been made redundant as businesses retrench or close. Some have already declared bankruptcies. Prior to the pandemic, tourism industry in Sabah had been affected regularly by air pollution (the 'haze') from fires and burning in Kalimantan, the criminal activities of illegal immigrants, and sporadic abductions, shootings and murders by militant Islamic groups operating along Sabah's east coast and the offshore islands (Yang et al., 2015; Hashim et al., 2018). Studies had also been undertaken of rural homestays in Sabah following the earthquake of magnitude 6.0 in the Ranau area near Mount Kinabalu in June 2015. As concluded in the research, in examining the response to disaster we should not rely on government support and rescue packages but also on human agency in the face of crisis, and the importance of positive attitudes towards recovery, resilience and local self-support (Kamarudin et al., 2019; Kamarudin et al., 2020). But these crises have been much less significant in their impacts on tourism in comparison with the Coronavirus pandemic, and Sabah is generally seen as a relatively safe destination (Kuilis-Bosimin & Chan, 2018).

Not only has Sabah had to face the almost complete disappearance of East Asian visitors, but domestic tourism in Sabah was then affected by the MCO from 18 to 31 March including travel restrictions both within and between East and West Malaysia. The MCO was then extended in a Phase 2 (1-14 April); Phase 3 (15-28 April); Phase 4 (29 April-3 May); and the most recent Conditional MCO phase 5 (4-May-9 June).

The response

In early February 2020, Sabah's State Government took firm actions and, in addition to the federal packages, it put in place its own stimulus package to assist tourism. Initially, several actions were taken to target domestic tourism and tourists from neighbouring countries, and reducing hotel rates and rentals at shopping malls. This ultimately made little difference due to the MCO which started from 17 March 2020. Then, the Sabah State Government introduced a follow-up stimulus package worth RM670 million (US$15.8 million), intended to support various communities, not only for frontline workers such as the District Disaster Committee in every district but also those in rural areas who have lost their sources of income and are in dire need of aid and food supplies. The State Government took into account the welfare of the Village Community Management Council (MPKK), Chairmen and Secretaries throughout Sabah affected by the changes introduced by the ruling Federal Government by allocating allowance payments throughout the year (Borneo Post, 2020). The second stimulus package aimed to target and save existing business sectors like tourism, agriculture, fisheries, food, construction and forestry in Sabah.

Measures by Rural Tourism Communities

At the micro-level, several tourism associations at district level have taken initiatives to assist their members such as homestay owners and local guides to prevent the virus from spreading through rural tourism areas. Rural tourism operators together with district tourism associations have outlined procedures to stop rural tourism activities and businesses at all rural sites. Local village communities are working as a team to monitor the travelling activities of their villagers. Banners, created with a clear message for people, 'Outsiders are prohibited to visit the village', 'Foreigners are prohibited from entering' have been placed at several village road junction points, for example in Tuaran District (Gonzales, 2020). The closure of tourism businesses in rural areas such as homestays, has had a great impact on the sources of income for the rural tourism operators. The district tourism associations have therefore allocated special funds for the purchase of essential products such as rice, sugar, and oil for distribution among their respective members.

Impacts of Coronavirus on Accommodation and Airlines

Accommodation is one of the top three tourist expenditures in Malaysia. Hotels, lodgings, inns and motels are among sub-sectors of tourism that have been most affected by the pandemic and experts predict its impact to last from 6 to 12 months. Since February 2020, 2,041 employees in the hospitality industry have been laid off, while 9,773 have gone on unpaid leave and another 5,054 were forced to take pay cuts, according to the Malaysian Association of Hotels (MAH) (Tourism Malaysia, 2020). The number will increase over the next few months due to travel restrictions, the MCO and the cancelling of group packages. Popular resorts in Kota Kinabalu like the Shangri-La Tanjung Aru and the Sutera Harbour complex enjoyed occupancy rates of 90% or more in 2019. Within the last two months these have dropped to around 10 to 12%.

On the positive side, hotel management has come up with several strategies to cope with the downturn of their business. For example, the Hilton and Shangri-La hotel chains, both of which have presence in Sabah, have introduced flexibility into their hotel reservation systems in terms of room cancellation, extension, rebooking and non-cancellation fees for existing bookings. According to Hotel Magazine (2020), most of the hotels in Asia, including Sabah are also actively involving employees in activities related to maintenance, repairing furniture and

housewares, renovation, cleaning of hotel facilities and rooms, and training for new skills and jobs in other sectors, and in employee retention activities such as redeployment, learning, and development.

Furthermore, according to the Malaysian Hotel Association (2020), a total of 11,993 hotel rooms were converted as quarantine centres in Malaysia. These are situated mainly in Selangor, Penang, Johor, Kedah, Sarawak and Sabah. In Sabah, the Pan Borneo Hotel, Ming Garden, Hotel Sixty3, Oyo Hotel and Monaco Boutique Hotel are taking in quarantine 'guests' as an alternative source of income.

The Coronavirus pandemic has also crippled the aviation industry. The International Air Transport Association (IATA) projects that globally airlines might incur between US$63 billion to US$113 billion losses in 2020. It is estimated that passenger revenue of Asia Pacific airlines could be reduced by 37% to US$88 billion for 2020 (IATA, 2020). Similarly, in Malaysia, major airlines like Malaysia Airlines, Malindo Air and Air Asia, all of which service Sabah, have been affected severely, which, among other things, has placed in doubt the viability of Malaysia Airlines. Rumours circulate about a possible merger with Air Asia, or KLM and Air France taking a stake in the airline. However, mergers, consolidations and takeovers are subject to approval by the Malaysian Aviation Commission.

Stakeholders in Sabah have adopted a 'new normal' and mitigation strategy. Market demand for tourism, tourist purchasing behaviour and business operations will be different post-COVID-19. Likewise, hotels and restaurants are shifting to short-term strategic adaptation. Airlines in Sabah have developed mitigation strategies by either reducing flight frequency and routes, temporary suspension of international routes, especially to China and other East Asian countries, capacity management, carrying more cargo instead of passengers, and phasing in domestic flights as a first stage (Anna Aero, 2020).

A Sabah Tourism Recovery Plan was introduced on 5 May 2020 involving six state agencies related to tourism including financial allocations to upgrade and improve existing tourism products, including infrastructure and maintenance facilities. It also indicates a shift from mass tourism to higher-yielding, higher quality tourism, the adoption of digital marketing as the main promotional tool and a focus on domestic discounted prices for major tourism sites **(**The Star, 2020). The plan requires a strong partnership between government and stakeholders in the tourism industry.

As of 11 May 2020, domestic tourism has been identified as the key to recovery and the Sabah State Government has announced the operations within Sabah only, including accommodation deals, adventure and recreational vacations, food and beverage sales, ticketing services and transportation, and the reopening of hotels except facilities such as prayer rooms, gymnasia, spas, sauna, lounges, swimming pools, meeting rooms, seminar halls, training rooms and buffets. There are also plans to increase the number of domestic flights within Malaysia and to and from Sabah. In Phase 5 of the MCO with effect from 9 May, 2020, domestic tourism has been allowed to resume operations but must comply with the health and safety 'standards of operating procedures' (SOP) set by the Ministry of Health and related authorities (Dzulkifli, 2020).

Conclusion

Given the uncertainties surrounding the future development of the Coronavirus pandemic and its socio-economic, political and health consequences, it is difficult to make firm predictions about the future of the Southeast Asian tourism industry. The seriousness of the pandemic, its rapid spread across more than 200 countries and the lack of knowledge about the virus itself suggest that the repercussions on tourism will continue well into 2021, and the wider economic impacts will extend well beyond that. In writing this paper it has been difficult to provide information on the scale of the problem and the direction in which it is heading. New cases and deaths, impacts on economies and counter-measures, specifically as these affect the tourism industry, change by the day.

Certainly, we need to know more about the changes in travel behaviour and perceptions of risk and decision-making occasioned by the pandemic. More specifically in the Malaysian tourism industry and the wider Southeast Asia, ultimately the effectiveness and impact of stimulus packages, cross-sectional financial loss analysis, and new measures and business strategies, which includes business resilience and crisis management issues, will need to be addressed. In addition, social distancing and MCO measures are likely to continue for some time to influence the way tourism businesses operate, how humans behave and respond to the contraction of the tourism industry and their adjustment to the continuing threat that the virus poses when people resume travelling. The tourism industry is one of the most affected by the Coronavirus outbreak and the cancellation of the 'Visit Malaysia 2020' campaign is a clear case in point.

What is also of interest are the ways in which the consequences of the pandemic play out and interrelate with

other areas of life and behaviour. For example, in some parts of Southeast Asia, it may turn out to have a profound effect on the future direction of political life (Vatikiotis, 2020). As we have seen Erik Cohen has examined the coincidence, antecedence, interaction and dynamics of crises in the context of Thailand (2010; Cohen and Neal, 2010). Clearly post-COVID-19 the tourism industry may never be quite the same again; some businesses will disappear; some destinations may well be avoided for some time to come; people may also continue to be wary of the close contact entailed in airline, train, river and bus travel and on cruise liners. The overdependence on the East Asian market of states like Sabah, and countries such as Thailand has already given rise to calls for the diversification of tourist source countries, for encouraging more domestic tourism, and, in certain sites, to move away from low-revenue East Asian mass tourism. However, the influence of China and East Asia and the revenue and employment generated in Southeast Asia may be too significant to resist and may already be too embedded in Chinese regional supply chains across a range of industries to encourage more radical changes in tourism plans and strategies and a future significant reduction in the numbers of Chinese tourists. But clearly some rethinking is required when this crisis ends about the kinds of tourism which Southeast Asia, including Sabah and Malaysia more generally, intend to promote and the relationship between mass package tourism directed to East Asia and other more sustainable forms of tourism activity with a wider spread of visitor source countries.

Competing Interest Statement

All authors have read and approved the manuscript and take full responsibility for its contents. The authors have declared that no competing interest exists.

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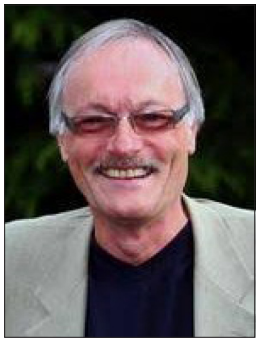

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ORIGINAL ARTICLE

Engaging with Students and Faculties Online in the Era of the Corona Virus Pandemic: A Higher Education Perspective

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ABSTRACT

Higher Education institutions are not strangers to sudden shocks or dips in the economic environment that sneaks upon them and create budget cuts and job losses due to poor enrolments, but quite often these situations have been gradual rather than abrupt, and in most circumstances had provided higher education the space to weed out unviable courses and unsustainable practices. The same cannot be said of the Corona Virus pandemic that has befallen much of the world currently. It came in quick and fast and spared none in its deathly grip. Higher education institutions scrambled to move students and faculty engagement and learning and teaching online. What are some of the effects of this abrupt move, and how has this impacted institutions and international students? This paper will attempt to provide some insights into the ways in which faculty and students are adapting to this new environment amidst anxieties, bereft of the usual campus camaraderie and day to day engagement in person.

Keywords: universities, learning and teaching, students and staff, global pandemic, COVID-19.

Introduction

Universities are bastions of power and responsibility sustained by knowledge and wisdom gained through years of scholastic achievements in research and learning and teaching. John Henry Newman believed that universities shaped students beyond that of academic ability and that the ideal university comprised a community of thinkers, who engaged in scholarly pursuits solely for the love of scholarship. (Idea of the University, n.d.). Academics have continued to expand on the notion of the university and what it represents. In his 2018 book, *The Ecological University,* Ronald Barnett contends that universities have not delivered their mandate fully in a fluid and dynamic environment. His book posits that the expanding realm of universities offer new potential as they are interconnected with a number of ecosystems: knowledge, social institutions, persons, the economy, learning, culture and the natural environment all of which need to engage with one another to benefit society (Barnett, 2018). This concept of interconnectedness and how closely each aspect of society is intertwined with one another, rings true in the present time. The Corona Virus pandemic has affected businesses, educational institutions, and populations alike, and globally higher education institutions have been forced to move learning online due to nationwide shut downs.

The paper draws from an institutional perspective and from the experiences shared by faculty members and students who are caught unaware in a situation that is unprecedented and is bound to be prolonged in duration, at least for rest of the academic year or until effective medical interventions are available. The paper references institutional scenario plans, insights and views from academics and senior faculty members in the United States, Asia and Australia, and details how the shift to online modes is affecting higher education establishments including students and staff at transnational campuses.

The Corona Virus Pandemic and Its Impacts on Academia

Initial Responses

The ongoing Corona Virus pandemic and ensuing global disruptions have been unprecedented for most of us and many economic sectors. As the academic calendar commenced in the southern hemisphere in late February 2020, the world watched countries struggling helplessly, ill-equipped to treat its citizens of the deadly virus sweeping through the lands. The virus that originated in China crossed borders quickly together with the horde of air travellers assisting to transport the virus to all corners of the globe, and governments were left with no choices except to impose travel bans in an effort to contain the virus that has since then exploded exponentially all over the world.

With the mandated ban on physical interactions and social distancing measures, leading to the closure of businesses and educational establishments, higher education grappled with the enormous gravity of what the temporary closures meant. Among the biggest challenges that universities faced, was moving students and faculty and learning and teaching from physical to online learning spaces whilst ensuring accessibility for all. Many higher education institutions utilize learning management systems and platforms to engage with students online as much as they do face to face to provide flexible learning opportunities, offering personalised learning, and seamless educational experiences to students while adopting a blended mode of learning delivery. Blended learning is a combination of learning and teaching approaches that incorporate numerous teaching models comprised of e-learning and face to face (F2F) learning. Blended learning extends innovation to eLearning, through access to online resources and the sustained demand for the interactive and personalized elements available in the learning experience. Through blended learning, the learner is more in control of setting out their experiences and assists higher education institutions to accommodate the individual needs of learners (Benefits of Blended Learning (n.d).

Institutions that had invested substantially in upgrading technology for learning and online systems, and had introduced blended learning to their students, and had maintained continuous professional development for their academic staff, discovered that their investments had somewhat paid off, as the transition to online learning and teaching in the wake of lockdowns and restrictive movement acts declared by governments had been less challenging. Nevertheless, the switch from physical classrooms to online learning spaces was thrust upon institutions. Despite the fact, many institutions were agile and had the capacity to shift learning online, it was a mammoth task to transfer the entire learning and teaching machinery online. Academic teams walked precarious tightropes and kept up frenetic paces to check that all resources were up to date and that students would be able to access and navigate the eLearning systems without any technical hitches.

In transnational higher education institutions that had been practising distributed learning, faculty members and students had had the experience of learning with peers and faculty in offshore campuses in a synchronous manner and were prepared for the temporary glitches due to tech interruptions. These technologies were applied over a period of time and had been tested for shared facilitation of teaching and online assessments for students.

Distributed learning represents a multi-media method of instructional delivery that includes a mix of web-based instruction, streaming video conferencing, face-to-face classroom time, distance learning through television or video, and other combinations of electronic and traditional educational models (Kozlowski & Bell 2006). Distributed learning systems (DLS), allow delivery of teaching by instructors to learners in multiple geographical locations and permits learner-instructor interaction in synchronous or asynchronous modes. Curtin University, Malaysia introduced distributed learning models at the campus in 2015, aligned to the *Learning for Tomorrow* concept introduced at Curtin Australia. This involved enabling collaborative learning and access to lectures and course materials in real time and equipping learning spaces with interactive technology. Students from the global campuses of the university in Malaysia, Singapore, Dubai and Mauritius are able to connect with their peers and faculty at the Perth campus through distributed learning spaces in real-time. These vibrant new spaces were designed to increase student engagement, foster collaboration between staff and students, and provide flexible, technology-rich environments that support active student learning. With the availability of this technology, students and staff at Curtin Malaysia engage in discussions and interact with their counterparts at the main campus Perth in real time (Giridharan, 2019). A number of units are taught in this mode, which empowers joint facilitation of sessions from both the Miri and Perth campuses. Experiences of using distributed learning coupled with robust learning management systems like Blackboard in place, and continuous professional training opportunities for staff to upgrade their knowledge and

skills assisted in the shift to fully online learning delivery models.

The effectiveness of teams coming together in demanding situations had been researched well. A variety of forces drive the efficacy of teams: increasing competition, consolidation, and innovation create pressures for skill diversity. Teams are most effective where there are high levels of expertise, rapid response, and adaptability. Teams with greater collective task and interpersonal cohesion and pride are also more effective (Kowloski & Ilgen, 2006). Teaching teams led by program coordinators and subject leaders worked across campuses to ensure that resources were accessible by students. While lectures had always been available for downloading by students, decisions had to made for the formats for the delivery of tutorials and seminars. For engineering and science courses, the situation was made more complex due to lab requirements. Instructional designers worked with faculty staff to identify strategies and solutions for designing alternate learning tasks. In order for instructional strategies to be effective, facilitators and instructional designers need to be able to integrate learning models with instructional design practices (Giridharan, 2019). While some labs could be duplicated through simulations and virtual experiments, there was a high dependence on accessible technology.

Angst, Uncertainty, and Anxiety as the Situation Unfolded

In early January, when the news of the Novel Corona Virus emerged, the senior executive team led by the Pro Vice Chancellor and the Deputy Pro Vice Chancellor at our university established a Critical Incident Action Team to establish guidelines and formulate a COVID 19 action plan to ensure the safety and well-being of staff and students on campus. Since it was the summer semester only about 25% of the student population had been attending classes. Stringent health and safety measures were implemented across campus to screen temperatures of all staff and students arriving on campus daily, and educational brochures on hand hygiene and cough etiquette were placed in all the main areas of the university. Hand sanitisers and safety masks were made available to everyone on campus as well. Classes were conducted with messages of hand hygiene and health precautions to be observed popping up ahead of lecture slides.

The first semester for undergraduate students in Australian universities commenced in the middle of February coinciding with academic calendars in transnational campuses in Malaysia, where the government announced travel restrictions on visitors from virus hit provinces in China. Some states like Sarawak announced entry restrictions on all visitors from China initially, and by end of February, added countries like South Korea, Italy and Iran to the list. Students from China were the most affected due to travel restrictions. Some students faced issues within China to obtain renewals of passports and approval of inter province travel. With the short interval of time to get back to their campuses overseas, many students were resigned to the fact that they would need to defer a semester or resume classes online. Chinese students who managed to get on flights to continue their studies in Malaysia, were placed in quarantine in their student residences for 14 days with health teams strictly monitoring their progress and well-being.

In the meantime, learning and teaching progressed in face to face settings with students wearing face masks and being seated a seat apart from their classmates up till mid-March 2020. On 18 March 2020, the Malaysian government announced the Movement Control Act for a period of two weeks till 30 March, which meant that all businesses and educational institutions would be closed during the period with only essential and emergency health services available to the public. Many international students returned to their home countries due to the uncertainty of the situation. This included students on semester exchange from transnational home campuses and from universities that had partnership arrangements. However, a substantial number of students chose to remain in student accommodations across institutions in Malaysia.

Academics commenced classes online with trepidation and anxiety. Most of them had minimal experience of teaching fully online and depended on their blended learning experiences to push them forward. Academics who had experiences of teaching courses online previously, advised faculty members to start simple and focus on getting readings and learning activities into campus learning management systems and attempt asynchronous learning practices first, as students may have limited access to the internet depending on where they were, in their homes or on campuses (Darby, 2020).

We conducted several surveys with students to understand how they were feeling and coping with their learning experiences online. Some of the surveys are student led and through an analysis of data and open ended comments, the institution and faculty are readjusting the ways in which learning is delivered. Some of the student comments were positive and encouraging.

They certainly appreciated the fact that most academics were trying their very best to guide and support them in ways that showed they cared. The surveys also helped staff understand what they needed to continue doing to assist students. Some of the comments revealed that students were overwhelmed with the number of messages they received from the faculty and they were struggling to keep up with the changes in schedules. It was especially challenging for students who were in their first year of university as they had had no previous experiences of learning online or learning on interactive platforms embedded in learning management systems.

Darby (2020) advises faculty that with creativity and innovation, students and staff could continue engaging as much as they could on smart phones, stating that the more staff interacted with students online, the more students would feel inclined to interact with the course and their peers turning teaching remotely a much more satisfying experience. She also reminds faculty to be sympathetic to oneself as they will need to continue adapting their teaching until they find a common ground for themselves and students.

The Movement Control Order in Malaysia was extended for another phase from 30 March to 14 April to further contain the virus and continued till 28 April to assist the hospitals to cope with the volume of patients and to prevent further escalation (https://www.thestar.com.my/news/nation/2020/04/10/mco-extended-until-april-28-pm-announces). In Australia, the UK and United States, universities remained closed with universities continuing with their operations online.

Dilemma Faced by International Students and Universities

Some universities in Melbourne, Australia, delayed orientation and semester commencement by two weeks due to concerns that international students from China would not be able to enter the country in time for classes due to quarantines and entry bans placed on them. (https://www.abc.net.au/news/2020-01-31/monash-delays-classes-over-coronavirus/11919828). Australian universities are heavily reliant on international students especially from China. About 106,600 **Chinese students** who had planned to commence or resume classes at **Australian** universities and other tertiary institutions had been unable to enter the country due to the travel ban on visitors from China by the government, impacting the Australian economy in lost fees and revenue at schools, colleges and universities amounting to as much as $ 8 billion Australian dollars (Pearlman, 2020).

Australia was not the only country that faced the prospect of reduced student enrolments from Chinese students. Universities with large numbers of students from China were rushing to readjust academic calendars, delay semester commencement, and provide alternate study plans as they braced for the losses in tuition revenue from cancelled enrolments. In recent years the number of students from China studying overseas had grown constantly with China becoming the largest source of international students in the U.S., the UK and Australia. Statistics from the Institute of International Education (IIE) showed that more than 300,000 Chinese students studied in the U.S. in 2018-19, and over 86,000 Chinese students were enrolled in higher education in 2019 in the UK. (Impact of COVID on overseas Chinese students, 2020).

The number of students from China studying in the U.S. had risen expeditiously as well stimulating a huge increase in tuition-paying undergraduates, and universities started depending on them for their revenue, and many American universities also forged partnerships with Chinese universities in research and other areas (Redden, 2020). The Corona Virus outbreak had prevented many Chinese students from returning to the spring semester due to travel restrictions impacting many U.S universities who had invested in student recruitment activities in China, as Chinese students form the largest group of international students in the U.S comprising slightly more than a third of all international students in U.S colleges and universities (Redden, 2020).

In Malaysia, transnational campuses, faced challenges with Chinese students being unable to attend classes in late February, if they were from the virus hit provinces such as Hubei. Students who were successful in arriving at their campuses were placed in voluntary quarantine at their homes or residences with health and counselling support.

Australian academics Ziguras & Ly (2020), have described the coronavirus outbreak as “the biggest disruption to international student flows in history”. They refer to Federal Education department data in Australia that showed 212,000 students from China were studying in Australia in late 2019, making up 28% of the total international student population in Australia, and state that the significant number of reductions in Chinese students, would have a long lasting effect on Australian higher education (Ziguras & Ly, 2020).

The Future of International Higher Education

Many academics, economists and world leaders are predicting that life will not return to normal anytime soon and the world as we know and experience it will not be the same again even after COVID-19 has tapered off to a certain extent. At least some experts are of the opinion that after the Corona Virus pandemic is over, the world will witness a society that is more harmonious and will discover a new economic model that benefits all, and may possibly show more international cooperation for global issues like climate change (Schifferes, 2020). How will academics and students change after countries relax the lockdowns that have been imposed? Many staff will reflect on what resources they utilised and students will think about what resources assisted them in their learning.

Open Educational Resources or (OER) has been gaining interest for a few years and educators from kindergarten classes to graduate schools have been turning to the source to avail of free text books and resources. SUNY Math professor, David Usinski is an advocate for free and open educational resources and explains that OERs benefit students, instructors, educational institutions and curriculum designers as it helps to level the playing field for students from low socio economic backgrounds who are unable to bear the high cost of traditional course materials (Usinski, 2018). As schools and universities have moved to online delivery of learning and teaching, OERs have become a valuable repository for teachers and students to access text books and references to supplement study materials. Many students will continue to study online for much of the academic year or even longer while campuses remain closed and OERs will definitely play a major role in assisting learning.

Education experts encourage academics teaching online to create an online presence to ease student anxieties and to enable them to know their lecturers better. It is recommended that academics start a social media channel for the class and create short videos that explain what the weekly topics are to generate a sense of connectedness (McMurtrie, 2020). It is expected that student anxiety and discomfort will increase in online spaces as they may not be adept at responding to discussion threads and may also face a disruptive learning environment at home shared with siblings and family members, and will need reminders for when assignments are due and regular communications from their teaching faculty (McMurtrie, 2020).

It is predicted that blended learning delivery modes will increase appreciably post the Corona Virus pandemic, as academics who had been engaging with students online on asynchronous and synchronous systems will tend to utilise these digital platforms complementary to their face to face teaching (Kim, 2020). Professors may also move more content online and use face to face sessions more for discussions, debate and facilitated learning. As humans are creatures of practice and learned behaviours, staff and students will no doubt reflect on their experiences and challenges of interacting and connecting to one another in novel ways and chose to relive those experiences or render them active in the aftermaths of the virus era.

Postmodernist philosophers had grappled with two main concerns: the first was the ability of interpreting text, which is related to hermeneutics, and the second was regarding the ability or adequacy of language to objectively describe truth. Nietzche (1844-1900) posited that truth is nothing more than an illusion and that each one of us constructs our views according to our own perceptions(An introduction to postmodern philosophy, n.d). The second issue regarding the ability of language to define truth was propositioned by Ludwig Wittgenstein (1889-1951), who stated that language is socially constructed and one understands the world according to our linguistic and social construct (An introduction to postmodern philosophy, n.d.). Both concerns seem to have re-emerged in present day in the light of the Corona Virus pandemic. Truth seems distorted as several versions and accounts of events seem to be peddled and espoused on the internet. Speeches of world leaders are heavily laden by rhetoric and retortions. Many have questioned the use of war metaphors to describe the present pandemic. For instance, President Trump referred to his approach to the pandemic as in a war like situation, "*I view it- in a sense as a war-time president".* Susan Sered, a professor of Sociology, stated that she was concerned by the adoption of metaphors to describe the situation as metaphors have the power to signal patterns and evoke unconscious reactions that affect the way we think (Sered, 2020).

In the book," Realizing the University in an Age of Supercomplexity", published twenty years ago, Ronald Barnett, stated that " a new world order is upon us, partly as a result of globalisation, partly as a result of information technology revolution, and partly as a result of other forms of change, we have to reckon with societal and global dislocations that challenge the progress with modernity… we are into a new world order" (Barnett, 2000, p.3). Barnett was referring to the post-modern university in a world subject to "infinite interpretability" or a super complex world. Barnett (2000) calls for universities to prepare students for this world, and coined the term

supercomplexity, referring to challenges faced in professional lives from not just handling overwhelming data and theories within a given frame of reference but also handling multiple frames of understanding, of action and self-identity in a world where fundamental frameworks are multiplying and in conflict. No doubt, universities and higher education institutions need to respond to the present scenario with innovative and creative solutions for long term sustainability.

Conclusion

The paper discusses how universities and its community are coping with being in a situation that no one had prepared for in recent times. It highlights the challenges faced by institutions, faculty and students who are trying to recreate a semblance of normalcy in these turbulent times. The present Corona Virus crisis reminds one of the phenomenon or concept of *supercomplexity* (Barnett,2000), in which the organizations and higher education institutions are being tossed around in a super storm swept by forces beyond their control. Nevertheless, we have to remind ourselves that higher education has endured several crises in the past and managed to emerge stronger through its steadfast commitment to quality of learning, support for students and scholarship and research and innovation. One thing remains clear universities will learn to engage more online even when we return to a new normal world post the Corona Virus pandemic.

Competing Interest Statement

The author has declared that no competing interest exists.

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ORIGINAL ARTICLE

Competency Assessment for OR - COVID-19

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ABSTRACT

Organizations are becoming more vulnerable to the external as well as internal challenges. Doing business becomes more cumbersome. One plausible remedy rests with the collective behavioural capacity of the organizations available to them in terms of their employees' behaviours and inner organizational systems that binds the organizational employees. Thus, samples were selected from the employees of the registered organizations of Malaysian Digital Economic Corporation Sdn. Bhd. (MDEC). A total of 252 samples responded to a survey-based instrument and the data were analysed with PLS-SEM to determine that the employees' collective behaviours capacities of commitment, communication, competency, community, connection, and coordination positively influenced the organizational resilience in MSC Status Companies. Employees are the most important resource for the organization to have a competitive advantage not only to lead but also instrumental in the survival of the organization (Tasic et al. 2019). A positive set of behavioural capitals exists inside the organisation enabling the organisation to thrive and survive by becoming an important agent for the growth of the national economy. The resilience as capacity is not the same for all organizations as it rests on the internal social system. This system enables the organisation to be resilient with the collective competency available to the organisation in terms of its people and system (Therese Sonnet 2016).

Keywords: Collective behaviours; resilience; organisation; COVID-19; Malaysia.

Introduction

The recent spike in the number of COVID-19 cases across the globe, led to the World Health Organization (WHO) in declaring the virus as a pandemic (Thomas-Rüddel et al. 2020). Many countries have institutionalised either complete or partial lockdowns. In the case of Malaysia, a restricted movement order has been in place since March 18th 2020 . Regardless of a partial of full-lockdown, most corporations across different industries, are focusing on business continuity, through work from home initiatives which require access to systems remotely and powered by high-speed internet connectivity. The impact of COVID-19 is compounded by the fact that many organizations have limited visibility into their risk exposure (Wang, Li, and Li 2020). This leaves employees, executives and stakeholders at risk and without comprehensive knowledge. This may require organisations to rethink competencies that are required to enhance resilience. Survival comes from the organization's capacity for resilience. Resilience permits the organization to get away with the difficult times and pass the times of the instability and adversity, to achieve the change and progress over the period of the time to survive. The organizational resilience is a capacity that organizations might take to understand their exposure and prepare for long term trends that can be effective against events like a coronavirus i.e. its workforce provides the necessary resources to pass the challenging

times to achieve a competitive advantage based on its people (Chaudhari, Nakhate, and Rautrao 2020).

It is important to realise that the recovery will not be static. It will not occur on a specific date. COVID-19 is unlikely to end suddenly given the lack of available therapeutics and the uncertain prospects and timing of a vaccine. Many organizations are therefore planning for multiple scenarios and time horizons as they shift from crisis response to recovery. Organizational resilience is the most important trait of the organizations with the increased competitiveness in the world. The organization with the least resilient capacities may not survive the next decade. Therefore, organizational resilience at the organisational level provides the necessary discussion to achieve and maintain the resilience. Policymaker can have the necessary input to achieve a resilient organization at the state or national level. Besides, a part of this study combines the divergent organizational methodologies of the system and network theories to approach organizational resilience based on the internal system and network exists between the people of the organisation to make the organisation a resilient one. Moreover, this study provides empirical support to enhance the understanding of organizational resilience as a capacity that can be measured and future enhancement very much possible as well.

Nearly 70% of Malaysian ICT based companies have continued their operation remotely due to COVID-19 (Department of Statistics Malaysia, April 9th, 2020). Galindo,2013 has proposed that behavioural awareness of employees towards organizational resilience (OR) requires investigation because societies have transformed and progressed because of advancements in ICT (Galindo and Batta 2013). Meanwhile, several scholars have claimed that disaster management and business continuity are imperative to establish an enhanced OR (Herrera and Janczewski, 2014). Nonetheless, information on the psychological effects of business continuity and organizational resilience (OR) from the behavioural and cognitive perspectives remains lacking. Therefore, in this study, we focus on the ICT sector, by taking a snapshot of the companies that are under the Multimedia Super Corridor (MSC) status, as companies that represent the ICT industry for the nation. The organizational resilience for MSC Status Companies is a new concept. However, it is important for the MSC Status Companies to be resilient as the large workforce gets employment from the MSC sector.

The Malaysian Digital Economic Corporation Sdn.Bhd. (MDEC), an agency in charge of MSC status companies, reported that while the adoption of technology during this pandemic is progressing, organisational resilience remains a priority issue. MDEC is also a platform nurturing the growth of local businesses, and to attract domestic direct investments (DDIs) and foreign direct investments (FDIs) from global multinational companies. The business continuity data space is projected to expand from 0.5 million sq. ft. to 5 million sq. ft. by 2020 (EPU 2017).

This paper focuses on core competencies that researchers suggest are vital to ensure organizational resilience. Many are also planning for the possibility of multiple waves of the pandemic and its continuing global uneven footprint. As a result, it is expected to a gradual transition from the respond phase to a new reality (Abdelhafiz et al. 2020). Organizations must prepare for different outcomes of the pandemic from mild, harsh, or severe and recognise that the recovery should adapt different situations within different countries and industries worldwide. Hence internal networks of enterprise occur in the shape of the internal process of the communication, community and competency that generates the necessary condition to have the commitment, connection and coordination, in a collective manner (Lengnick-Hall and Beck 2016). Therefore, it is important to identify the role of the internal dynamics of communication, community, competency, commitment, connection and coordination that enable an organization to achieve resilience in Malaysia. The aim of this study is to examine, if the collective competencies as listed above, play a vital role in determining the extent of organizational resilience in the context of a global pandemic.

Literature Review

The concept of resilience at the individual level is composed of individual's capacity to deal with the stress or an individual's ability to improve the resilience i.e. to work better under different stress situations (Mafabi, Munene, and Ahiauzu 2015). Based on the evolutionary theory of organizations, the role of threat conditions that move individuals, groups or organizations to avoid risks. It is natural to avoid risk or threats as well as to return to the normal position after facing a challenging situation. However, the organizational response to the threat and turbulent situations is part of their strategy based on the ideology of the organization (Annarelli, Battistella, and Nonino 2016). Organizational resilience is the capability to handle internal and external problems (Mallak and Yildiz 2016a). Some researchers defined organizational resilience as the competency to overcome problems (Annarelli and Nonino 2016). An important assumption in management is that employee's attitude and reactions to organizational change are closely associated (Rebeka and

Indradevi 2017). This theoretical paper tries to capture the attitude of employees' change in an organization. Competencies in overcoming problems in an organization is believed that both conceptualizations of the organizational resilience have similarities as both emphasizes on organization's survival and in dealing with challenging issues.

Resilience is often associated with the emergence of defencelessness and considered as the basis of triggering the protective behaviour or the risk factors where the perception of risk generates the perception of vulnerability and in turn triggers resilient behaviour (Mafabi et al. 2015). Perception of risk is highly associated with the personality dynamics of individuals (Connor and Davidson 2003). Each situation determines the activation of the resilience behaviours based on the adaptive capacity of the individual to address the risk factors that need attention to engage in the protective behaviours. Many times the individuals have fixed or neutral behaviours towards the risk factors as the individual views the situation as normal or demand no extraordinary action. That is the reason that the several resilience models based on vulnerability as the triggering point for resilience behaviour (Annarelli & Nonino, 2016).

Organizational Resilience

There are three main conceptualization streams for organizational resilience. Firstly, resilience is an innate feature of the organization, secondly, it is the outcome of the organizational activities for example, what the organization does and thirdly, the level of disturbance that can be tolerated by the organization (Annarelli and Nonino 2016). These three conceptualizations are broadly trying to grasp the notion of organizational resilience in three different ways. The resilience may be the capacity or the outcome of the activities of the organization to take on turbulent situations and survive. The resilience in dealing with known or unknown turbulent conditions is presently the most demanding organizational capacity faced by the organizations (Annarelli and Nonino 2016). Organizational resilience needs to be differentiated from the survival of the organization (Bhamra et al. 2015).

In this context, Malik defines resilience as "the developable capacity to rebound or bounce back from adversity, conflict, and failure or even positive events, progress, and increased responsibility" (Malik 2013). Therefore, organizational resilience is the ability of the organization to deal with the internal, external changes and risks. Few scholars termed organizational resilience as the capacity of the organization (Mallak and Yildiz 2016b) to learn from the environmental factors and gain the required resources that enable the organization to recover and bounce back to its normal position (Mafabi et al., 2015). The learning can be a single loop, double loop or multiple level learning (Arouri, Nguyen, and Youssef 2015). The organizational learning can be a viable option to explore organizational resilience (Annarelli & Nonino, 2016). The scholars called it as the capability of the organization to deal with the unforeseen (Horne III and Orr 1998). The ability, capacity, or capabilities have different meanings, but they describe the same thing. They refer to how the organizations can handle any crisis before it occurs, and aftermath learn from the mishaps. This process helps to develop resilience by withstanding the situations.

Manyena (2015) posit the the valuation of organizational resilience is multifaceted (Bhamra et al. 2015). Organizational resilience is the latent capacity of the organization (Powley, 2009). However, Gilly, 2014 termed organizational resilience as the active and reactive capacity of the organization (Gilly, Kechidi, and Talbot 2014). Nevertheless, organizational resilience is also considered as incremental and dynamic(Ruiz-Martin, Lopez-Paredes, and Wainer 2018) . Resilience is also the quality of the organization to meet the challenges of any change. Change can be in the form of an external stimulus or initiated by a change in the top management.

Based on the suggestion endorsed by McManus, Seville, Vargo and Brundson (2008) resilience is the combination of adaptive capacity, situational awareness and management of vulnerability at the organizational level (Phillips 2019). The adaptive capacity is the capacity of a system to change according to the changing environment. The organizations have internal and external factors that impact them and they need to adapt accordingly. To adapt well and remain resilient organization need to be well aware of these factors and their changing nature that may impact the organization. Furthermore, the resilience of an organization needs to have the internal capacity to manage and face crisis situations. At the enterprise level flexibility, adaptability, agility and efficiency are the attributes needed for enterprise resilience (Phillips 2019).

Lengnick-Hall (2016) posited three components mainly cognitive, behavioral and contextual for organizational resilience (Lengnick-Hall and Beck 2016). The cognitive component develops an ideological identity among the organization's employees. Another approach that can be employed is to base organizational resilience of having an ideological identity that is value-based resonated well with the value-based behaviours of the organizational community as well (Bhamra et al. 2015). The idea,

in this case, is for the organization to have resilience. An organization needs resilient employees along with internal systems that activate or trigger organizational resilience. Consequently, the behavioral capacities of the employees can act as the enabler for organizational resilience.

This leads to the behavioural resilience that required to be complex but based on the cognitive part (Manyena 2016). In short, the organizational routines and norms activate the functions that enable an organisation to have resilience (Lengnick-Hall and Beck 2016). The contextual component provides the means to integrate cognitive and behavioural resilience. The contextual resilience activates social capital or organizational level resource sharing network (Luthans and Youssef 2007).

Furthermore, the resilience of an organization is complex and is based on multiple internal and external factors that influence the resilience capacity of the organization. For instance, employees, suppliers, other market players, and policymakers (Gilly et al. 2014) and the existing system that operationally performs well inside the organization (Linnenluecke 2017). Moreover, endogeneity was not discussed in the literature as a prominent causality issue in the organizational resilience.

Assessment of the Organizational Resilience

The assessment of the organizational resilience is as complex as its definition. Wilson (2015) recommends gauging the organizational resilience on the seven attributes based on recommendations by Mallak (1998) on the conceptualization of organizational resilience for example, perceiving experiences constructively, performing with positive adaptive behaviours, the adequacy of external resources, expansion in decision-making boundaries, practice bricolage, tolerance for uncertainty and building virtual role systems(Wilson et al. 2015). Hamel and Valikangas (2010) proposed to estimate the organizational resilience on the ability of the organization to respond, monitor, anticipate and learn (Valikangas 2010a). Organizational resilience was measured with four factors for example, situation awareness, management of keystone vulnerabilities, quality and adaptive capacity (Whitman et al. 2013). Moreover, the awareness of forthcoming opportunities and crisis for the organization are important to become a resilient organization. Lee, Vargo and Seville (2013) suggest that evaluating the organizational resilience with the four factors and 73 items. Meanwhile, the Whitman et al. (2013) proposed the same four factors measured with 52 items as the shorter version of the Lee et al. (2013) scale based on two assumptions that the low rate of response can be tackled and a better correlation between their scales (Lee, Vargo, and Seville 2013). Lee (2013) scales had the added features of innovation and creativity, collaboration and reporting compared to the scale of McManus(2008) (McManus et al. 2008; Lee et al. 2013).

Another approach was to base organizational resilience on system theory. The theory asserts that members of an organization are the actual resource and they form the capacity to achieve resilience in an organisation (Riolli & Savicki, 2003). The idea was to have resilience in the organization. An organisation needs resilient employees. The employees are the core assets of an organization. The organization's capacity responds to the shocks and risks that rest on the employees' capacities to respond to the challenges and threats. The mobilised and robust response can be achieved through collective efforts by the organization members. A social system is required to investigate the threats and challenging situations faced by the organization (Burnard & Bhamra, 2011). Therefore, the behavioural capacities of the organisation's employees can act as the enabler for organizational resilience (Annarelli & Nonino, 2016; Horne III & Orr, 1998). Moreover, the resilience of the organization does not rest totally on the organization's resources but the collaboration and joint efforts of its stakeholders including employees, supplier, other market player and policymakers (Linnenluecke 2017). This sense of resilient behaviour enhances when employees have a blend of cognitive, behavioural characteristics. In other words, the good or bad operations of an organization rest on the action of people and their respond to the internal and external challenges faced by the organization from time to time. This ability to react and counter in order to revert to the previous situation following the uncertain situation and circumstance is regarded as the concept behind a resilient organization.

Hypotheses Development

In this study, the organizational resilience is defined as the capacity of the organization based on the blend of cognitive, behavioural and contextual characteristics that trigger the readiness of the organization to achieve the resilience (Linnenluecke 2017). The idea in this research is, the organization's capacity resilience can be developed and managed, based on employees' efforts. These concepts are supported by the literature in human management. The lack of empirical work in this direction suggests that it needs more exploration with empirical work. This study also contributes to the collective behavioural model of organizational resilience. Organizational resilience is based on six components namely, vision,

values, elasticity, empowerment, coping and connections (Mallak, 1998). The work by Somers (2009) based on public organization was challenged by Mallak's framework. It showed that it was challenging to stand with individual and organizational resilience objectives. This was because the organizations' social systems centre on the dynamic and systemic interplay of the people and the structure of the organization. The organizational capacity that responds to the norm after facing a challenging condition is the notion of a resilient organization (Caralli et al. 2010). However, this capability to combat or bounce back is not associated with the challenges but for the enterprise to be ready with the right information to reduce the vulnerability in an effective manner (Annarelli and Nonino 2016). As this capacity is developed inside the organization with experience, a negative circumstance can move the organization to generate a positive effect (Chow and Ha 2009). This makes an organization resilient and provides a strong argument for collective sensemaking and working towards shared objectives with the collective capacities to achieve the organizational goals. This aggregation of the behaviours is also objectively mentioned by Lengnick-Hall et al. (2011).

Commitment within the Organization

The employees in an organization are the agents of the organizations (Allen & Meyer, 1990). Their actions represent organizational actions. It is well understood now that the committed employees are the biggest resource and capital for the organization. Commitment as a behaviour describes the employees working for the good of the organization and taking full responsibility to work for the betterment of the organization (Meyer and Maltin 2010). Committed employees are proud to be associated with the organization and they work for the betterment of the organization in every way (Bustinza et al. 2019). The sense of belonging to the organization is so great that committed employees take pains to solve problems for their organization with personal sacrifices (McManus et al., 2008). The collective perceived commitment portrays the general sense of motivation that prevails in the organization. This sense of commitment when prevails at the organizational level, it becomes the collective stance at the organization and enriches it to achieve resilience (Lengnick-Hall et al, 2011). Above discussion leads us to the hypotheses that

> Hypothesis 1 (H1): *The collective sense of commitment has a positive effect on organizational resilience.*

Communication within the Organisation

An organization as a social system needs to effectively exchange ideas and information through communication. With accurate and authentic information, employees were well informed and had the knowledge to perform assigned tasks (McManus et al., 2008). Moreover, communication allows the necessary confidence for culture among the employees to support and encourage each other. In turn, open communication leads to building trust and preparing employees with a community feeling to face a crisis (Connor & Davidson, 2003). Organizational communication is a vital part of the culture as well as the prevailing norms of the organizations (Annarelli & Nonino, 2016). As effective communication relies on the effective working of the organization, the same is required to face adversity and to work amicably in difficult situations (Shittu, Parker, and Mock 2018). The organization that has a strong communication system enriches the employees' understanding in normal and crisis times, making it more resilient compared to the rest (Riolli and Savicki 2003).

> Hypothesis 2 (H2): *The collective perceived communication has a positive effect on organisational resilience.*

Community within the Organization

An organization is a community (Lee et al. 2013) and it works well when the community's perception is high among the fellow members in the organization. McManus et al. (2008) discussed the importance of the adaptability reflected by organizations as a response to the contingencies from inside as well as out. The community's feeling among the employees of organizations enables them to share the knowledge and support each other by sharing the information (Annarelli & Nonino, 2016). The flow of the information leads to the lessening of ambiguity among the organization's employees and they are able to perform the tasks efficiently. The people with a higher feeling of community put more efforts to resolve the organizational problems (Lee et al., 2013). Moreover, the employees with a high sense of teamwork, work together to handle the organizational disruptions to effectively come out of the crisis situation. We hypothesise that the

> Hypothesis 3 (H3): *The collective sense of community has a positive effect on organizational resilience.*

Competency within the Organisation

Employees bring their competencies to organizations and work well if they are given a direction to perform well for the organization. An organization essentially is the collection of collective competencies (Lengnick-Hall et al., 2011). An individual's capacity to foresee the issues in multiple angles enables him or her to have more clarity of the issue and resolve it immediately (Connor & Davidson, 2003). Furthermore, the competency to deal with crisis situations are taught within the organization. The community in the

organization with their competencies gets involved in improving job performance. Moreover, the people within organizations make every attempt to resolve the issues with their collective competencies (McGreavy 2013). This collective perception of competency when activated makes an organization a resilient one. We hypotheses that

Hypothesis 4 (H4): *The collective sense of competence has a positive effect on organizational resilience*.

Connectedness within the Organization

Organizations are a network of relationships. Strong organizations are those that have high interrelationship within the organization at all levels of its structure while the weak organization has weak interrelationship among the people. This feeling of connectivity enhances organizational resilience (Nemeth et al. 2004). Although, the interconnection within the organization is important, the connection outside the organization with the industry's players is also important (McManus et al., 2008) as the crisis can originate from within as well as external. This interconnection leads to teamwork among employees. It has an external connection with the industry's players to make the organization more aware on the industry's situations that may impact the organization positively or negatively (Valikangas 2010b). This interconnectedness comes with collective consciousness for the entire industry's players to face the crisis situations that may impact all. Sharing of the information opens the avenue to share strategies among the industry's players to face the crisis (Sellberg et al. 2018). Therefore, this connectedness enables the organization to be more resilient. Therefore, we hypotheses that

Hypothesis 5 (H5): *The collective sense of connectedness has a positive effect on organizational resilience*.

Coordination within the Organization

Organizations are a system that needs coordination among the people working within it. This coordination represents the structure that makes the organization a system that works well as a jointly coordinated organism (McManus 2008). The efforts within the organization need to be coordinated to have the feel of the organization; otherwise, it only becomes a collection of people having divergent objectives (Connor and Davidson 2003). The coordination within the organization enables the organization to work as a team to effectively accomplish the assigned tasks and analyze the vulnerabilities currently affecting the organization now as well that may impact in future (Wachs et al. 2015). Coordination is needed to divide the tasks between the employees in an effective manner and it is made possible by individual efforts (Lee et al. 2013). Moreover, the coordination also makes it possible to prescribe the new ways to do the organizational tasks as well as foresee and prepare for the coming challenges that can impact the business as usual stance (Lee, Vargo, and Seville 2013b). The organization which has higher coordination with the employees becomes less vulnerable and more resilient.

Hypothesis 6 (H6): *The collective sense of coordination has a positive effect on organizational resilience.*

Methodology

This study has a quantitative cross-sectional design to explore the relationship between organizational capacities and organizational resilience.

Sample Selection

The sample size for this study was estimated with the GPower version 3.1. Based on the power of 0.95 with the effect size of 0.15, the effective sample size required for this study was 153 with 6 predictors. However, as suggested by Chin (2010) the minimum sample size must be ten times of the path in the structural and measurement model (Chin and Dibbern 2010). Thus, the sample size for this study must be more than 150. Five hundred sets of the questionnaires were sent to 20 organizations registered with MDEC. A total of 292 questionnaires came back completed. The usable questionnaires were only 252.

Research instruments

The questions were designed to be simple and have balanced phrases that the respondents can easily understand and provide their own thoughts on the subject. Five items were utilized to gauge the community behaviour of organizational members and a sample statement was '*We as a team feel responsible to handle disruption for the organisation's effectiveness*'. The items were adapted from Lee et al. (2013). The work of Connor & Davidson (2003), provides the evidence to use collective competency as a resource that enables an organisation to be resilient. To estimate the collective competency of the employees, five statements were utilized and a sample statement was '*I resolve crisis competently at work'*. Another area is the connection perception within the community of the organization. The work of Connor and Davidson (2003) provide viable options. To assess the connection among the organizational employees, five statements were used and a sample statement was '*I am able to share my strategies with peers and partners to avoid adversity'*. Work of Allen and Meyer (1990) and

McManus et al. (2008) provides a rich understanding of the commitment that exists and supports the success of an organization. The perception of commitment of the organization's employees was estimated with five statements and a sample statement was '*I enjoy discussing my job and roles with other people to get better ideas '.*

Another important aspect of the organization is communication. The work of McManus et al. (2008) and Connor and Davidson (2003) highlights the importance of communication in the organization. The communication as the behaviour of the employee was estimated with five items and a sample item was '*I am informed and updated that I am able to disseminate more embedded knowledge to my work groups'*. The work of McManus et al. (2008) and Connor and Davidson (2003) discuss the status of coordination in the organization. For the estimation of the coordination, five statements were used and a sample statement was *'I am able to analyse and negotiate with staffs to handle situations efficiently during crisis'*. Organizational resilience is conceptualized with the definition by Wing and Wai (2009). The organizational resilience was evaluated with six statements and a sample statement was '*My organisation develops close and secure relationships to benefit from negative circumstances*'. Table 1 shows the content of Connor and Davidson resilience scale. Table 2 shows the items correlation and rotated factor pattern for the Connor and Davidson Resilience Scale.

Table 1. Content of Connor and Davidson Resilience Scale

Item No.	Description
1	Able to adapt to change
2	Close and secure relationships
3	Sometimes fate or God can help
4	Can deal with whatever comes
5	Past success gives confidence for new challenges
6	See the humorous side of things
7	Coping with stress strengths
8	Tend to bounce back after illness or hardship
9	Things happen for a reason
10	Best effort no matter what
11	You can achieve your goals
12	When things look hopeless, I don't give up
13	Know where you turn for help
14	Under pressure focus and think clearly
15	Prefer to take the lead in problem solving
16	Not easily discouraged by failure
17	Think of self as strong person
18	Make unpopular or difficult decisions
19	Can handle unpleasant feelings
20	Have to act on a hunch
21	Strong sense of purpose
22	In control of your life
23	I like challenges
24	You work to attain your goals
25	Pride in your achievements

Source (Connor and Davidson 2003)

Common Method Variance (CMV)

CMV is the measurement error that arises because of the specific method utilized in the study for the scale utilized, data collection techniques and analysis technique. The construct of the interest shares the common variance among the constructs of the study. The CMV was corrected by the procedural and statistical way as well. The scale utilized in this study was used so the statistical remedy was the best-suited. Harman's one-factor test was the test suggested by the Podasakoff, Mackenzie (2003), where one factor is extracted and expected to account for less than 40% of the variance explained by the first factor in the principal component analysis (Podsakoff et al. 2003). For this study, which were collected from one source, was inspected for common method bias utilising Harman's Single Factor Analysis in SPSS Table 3. CMV is the variance attributable to measurement method instead of the construct(s) supposedly represented by the measures. The total variance extracted showed that the extraction sums of squared loadings on the first factor was 27.166% i.e. less than 50.000%. As such, it was concluded that this dataset was free of common method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003).

Multivariate Normality

The multivariate normality of the data was not required for the partial least square method.

However, as per the recommendation by Peng and Lai (2012) the multivariate normality of data was tested instead of making a general assumption about the data(Peng and Lai 2012). The study data multivariate normality was tested on the Web power online tool. The Mardia's multivariate skewness and kurtosis coefficient and p-values were calculated. The results highlights the data multivariate normality assumption rejects the resulting p-value less than the 0.05 and confirms that the data is non-normal (Cain, Zhang, and Yuan 2017).

Data Analysis Method

As this study is a quantitative approach and due to the non-normality of the data, this study utilized the PLS-SEM. The results of this study are reported as per the recommendations of Hair, Ringle and Sarstedt (2014) for

Table 2. Item total correlations and rotated factor pattern for the Connor and Davidson Resilience Scale

Item	Item Total Correlation	*Factor*				
		1 (7.436)	2 (1.563)	3(1.376)	4 (1.128)	5(1.073)
24	0.61	0.70870	0.14250	0.04339	0.19253	0.01779
12	0.62	0.63998	0.22255	0.20851	0.05018	0.11083
11	0.62	0.62497	0.11656	0.13206	0.21732	0.06408
25	0.56	0.60385	0.04385	0.14600	0.22531	0.11798
10	0.52	0.59601	0.17001	0.16642	-0.03336	0.10776
23	0.59	0.55800	0.32628	0.00758	0.12202	-0.04681
17	0.70	0.40381	0.35512	0.12714	0.35236	0.00409
16	0.62	0.39651	0.37804	0.26274	0.18958	0.03547
20	0.40	0.08774	0.67393	0.05234	-0.06238	0.23265
18	0.58	0.29395	0.57585	-0.01006	0.19034	0.08147
15	0.57	0.29967	0.53047	0.04440	0.23134	-0.01552
6	0.58	0.11507	0.52564	0.40443	0.12267	0.03711
7	0.55	0.14586	0.46703	0.30584	-0.01699	0.27429
19	0.64	0.17227	0.43428	0.27115	0.39728	-0.01199
14	0.64	0.25215	0.42942	0.26572	0.36228	-0.10734
1	0.55	0.07334	0.08512	0.75885	0.10762	0.03223
4	0.64	0.07074	0.19156	0.61921	0.40002	0.02811
5	0.69	0.26961	0.37932	0.55332	0.09561	0.08239
2	0.36	0.23482	-0.08203	0.53775	-0.14060	0.31552
8	0.67	0.34423	0.34073	0.43996	0.16462	0.04038
22	0.63	0.21396	0.12493	0.09219	0.77469	0.02935
13	0.62	0.15177	0.03725	0.20513	0.54772	0.40077
12	0.64	0.36495	0.15438	-0.02278	0.53186	0.32889
3	0.30	0.01386	0.01460	0.15972	0.15786	0.77820
9	0.40	0.12061	0.24612	-0.00029	0.05145	0.73662

Source (Connor and Davidson 2003)

the PLS-SEM. The recommendation for the indicators reliability at the item level is to have a standardized indicator loading of 0.70 and as for explorative studies the item loading is at 0.40 (Hair et al. 2014). The internal consistency was tested with Cronbach's alpha and composite reliability. The suggested values for both are 0.70 and above. The average variance extracted value must be 0.50 or above for each construct. The path coefficient represents the value of the effect of the input variable for the output relationship. The r^2 is the measure of the explanation of the outcome variables with the input variables. The effect size (f^2) and Q^2 are the measurements of the model. The model effect size (f^2) is the measure of the effect of each input variables on the outcome variable. Cohen's (1988) study provides the guidelines for the understanding of the (f^2). The effect sizes of 0.32, 0.15 and 0.02 presents the large, medium and small effect respectively. The Q^2 represents the predictive relevance of the model that how much is the accuracy of the input variables in predicting the outcome variables. The Q^2 value of 0.02, 0.15 and 0.35 indicates the small, medium and large predictive relevancy of the model respectively (Haier et al., 2014).

Data Analysis

Descriptive Statistics

The 252 samples were taken from the enterprises registered with the MDEC, Malaysia. The respondents were largely male (56.3%). The statistics report from the Department of Statistics Malaysia showed that 77.8% of male employees were in the category of Senior Officers and Manager, while for female employees it was 22.2%. Next, in the category of professional and technical staff, male and female employees were 55.3% and 44.7%, respectively. This study proved through the survey conducted that male respondents were more than female respondents because men dominated the workforce.

Table 3: Harman's Single Factor Analysis Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	**16.300**	**27.166**	**27.166**	**16.300**	**27.166**	**27.166**
2	5.014	8.357	35.523	5.014	8.357	35.523
3	4.247	7.078	42.601	4.247	7.078	42.601
4	3.510	5.850	48.451	3.510	5.850	48.451
5	2.809	4.681	53.132	2.809	4.681	53.132
6	2.129	3.549	56.681	2.129	3.549	56.681
7	1.670	2.783	59.465	1.670	2.783	59.465
8	1.559	2.599	62.064	1.559	2.599	62.064
9	1.489	2.482	64.545	1.489	2.482	64.545
10	1.090	1.817	66.362	1.090	1.817	66.362
11	1.019	1.698	68.061	1.019	1.698	68.061
12	.966	1.610	69.671			
13	.919	1.531	71.202			
14	.851	1.418	72.620			
15	.791	1.318	73.938			
16	.748	1.246	75.184			
17	.721	1.201	76.385			
18	.712	1.186	77.571			
19	.660	1.100	78.671			
20	.639	1.065	79.736			
21	.595	.992	80.728			

Table 4. Profile of the Respondents

	n	%		n	%
Gender			*Age*		
Male	142	56.3	Less than 30 years of age	61	24.2
Female	110	43.7	30-39 years of age	90	35.7
Total	252		40-49 years of age	76	30.1
			50-59 years of age	25	9.92
Education			60 years of age or above	0	
SPM	17	6.7	Total	252	
Diploma	45	17.9			
Degree	164	65.1	*Marital Status*		
Master	22	8.7	Single	173	68.6
Others	4	1.6	Married	73	28.9
Total	252		Divorced	3	1.19
			Separated	0	0
Working Experience			Widowed	3	1.19
1-5 years ago	72	28.5	Total	252	
5-10 years ago	95	37.6			
10-15 years ago	32	12.6	Nationality		
15-20 years ago	16	6.3	Malaysian	230	91.2
20-25 years ago	27	10.7	Non-Malaysian	22	8.7
Over 25 years ago	10	3.9	Total	252	
Total	252				

The respondents of 30 years of age or more made up of 85% of the total sample. On the other hand, population statistics from the Ministry of Human Resources (2017) revealed that the age group of 25–29 years was the highest while the second highest age group was 30–34 years. However, the samples were mostly single (68.6%). Most of the respondents are educated with a college degree (65.1%). The two big segments of respondents had 6-10 years of work experience (37.6) and 1-5 years of experience (28.5%). The rest had work experience of more than 10 years. The respondents were predominately Malaysians (91.2%). The report is shown in Figure 1. In addition, based on the Employment Statistics (2015), the category of employment with diploma and degree showed the highest increase, i.e. an annual average growth of 14.56%. Figure 5.1 shows demographic empowerment in Malaysia based on gender. Based on the results of the census, 72.65% of respondents were in the age group of 26–35 years. This age group consisted of millennials born between 1980–1996. They formed the highest percentage of employees because they were highly informed with the current development compared to baby boomers. Therefore, people from this age group joined the workforce with suitable education and knowledge. As such, in this research, the age group of 26–35 years registered the highest number of respondents who were employees attached in MSC status organizations. They align with Malaysia's aspiration to become a competitive, developed, and high-income nation.

Validity and Reliability

As recommended by Hair (2013), the composite reliability must be 0.70 or greater for each construct (Hair, Ringle, and Sarstedt 2013). The results depicted in Table 5 show that the composite reliability for each construct was 0.860 or more. The Cronbach's alpha reports the inter-correlational estimate of the question items for each construct. The Cronbach's results show that 0.803 is the minimum value. The other constructs have values above than the prescribed limit of 0.70. Therefore, the Cronbach's alpha and CR values denote that the constructs are reliable. The average value extracted (AVE) for all items in each construct need to be more than 0.50 score to establish the convergent validity to demonstrate the uni-dimensionality. It showed that the items had sufficient convergent validity. After re-examining the factor loadings values, those lower than 0.6 were deleted to raise AVE rating (Ringle, Sarstedt, and Hair 2013). Items highlighted in red, as shown in Table 6, had low ratings (i.e. below 0.6). Thus, removed from the scale (Ringle et al. 2013). Then, the new factor loading (FL) ratings were determined in Table 6A after PLS algorithms were run for the model.

Findings of the study – Demographic

Demographic data collected		Statistics report from the Department of Statistic	
		Senior Officers & Manager	
Male	56.3%	Male	77.8%
Female	43.7%	Female	22.2%.
		Professional & Technical staff	
		Male	55.3%
		Female	44.7%

Statistics (Ministry of Human Resources)		Respondents age group	
Age Group	Q4 -2018 '000)	Age Group	% of respondents
25–29	3302	26–35 years.	72.65%
30–34	2886.9		

Figure 1: Demographic Empowerment In Malaysia (Source: Department of Statistics Malaysia)

Table 5. Reliability analysis

Variables	Number of Items	Mean	SD	Cronbach's Alpha	Composite reliability	AVE	VIF
CMM	5	4.257	1.06	0.916	0.937	0.749	2.001
COM	5	4.287	0.99	0.839	0.885	0.608	0.783
CIT	5	4.057	1.07	0.852	0.893	0.627	2.324
CMP	5	4.085	1.21	0.803	0.860	0.552	2.209
CON	5	4.228	1.13	0.854	0.950	0.631	0.296
COD	5	4.142	1.04	0.854	0.902	0.698	1.638
ORE	10	4.47	0.99	0.826	0.874	0.536	-

Note: CMM: Commitment; COM: Communication; CIT: Community; CMP: Competency; CON: Connection; COD: Coordination; ORE: Organisational Resilience; AVE: Average Variance extracted

To test the discriminant validity, the loading for each item and cross-loading need to be checked (Table 6c). The results showed that the item loads on their respective variables and fulfilled the assumption of the discriminant validity. The results are shown in the annexure. Another test for the discriminant validity is to check for the Fornell-Larcker criterion (shown in Table 6d). The results are shown in the annexure and the values are in an acceptable range. Another suggested test for discriminant validity is the HTMT ratio (as shown in Table 6e). The HTMT values must be at 0.90 or less to proof that the study has discriminant validity. The results depicted in the annexure showed that the study had no evidence of the lack of discriminant validity.

Table 6a: Factor Loadings (Before Removal)

Item	Loading	Item	Loading
CMM1	0.772	ORE1	**0.653**
CMM2	0.817	ORE2	0.723
CMM3	0.777	ORE3	**0.652**
CMM4	0.763	ORE4	**0.681**
CMM5	0.832	ORE5	0.734
COM1	0.866	ORE6	**0.656**
COM2	0.827	ORE7	**0.635**
COM3	0.865	ORE8	0.723
COM4	0.877	ORE9	0.747
COM5	0.893	ORE10	**0.663**
CIT1	0.827		
CIT2	0.786		
CIT3	0.843		
CIT4	0.741		
CIT5	0.770		
CMP1	**0.673**		
CMP2	0.822		
CMP3	0.848		
CMP4	0.765		
CMP5	0.787		
CON1	0.814		
CON2	0.791		
CON3	0.840		
CON4	0.877		
CON5	0.894		
COD1	0.713		
COD2	0.843		
COD3	0.857		
COD4	0.853		
COD5	0.753		

Path Analysis

The adjusted r^2 value for the model indicated that the 21.8 percent in the organizational resilience was explained by the organizational communication, community, commitment, competency, connection and coordination that existed and was perceived by the organizations' employees. The predictive relevance (Q^2) value for the model was 0.106 indicating a small predictive relevance of the six hypotheses on the organizational resilience among the sample from the Malaysian MSC registered with the MDEC.

The standardized path coefficients, t-values and significance level are presented in Table 3. The path coefficient for the organizational commitment on organizational resilience was (β = –0.065, p = 0.156), which does not support the H1. The results showed that the effect of the organizational commitment on organizational resilience is negative and insignificant. The path of coefficient for organizational communication on organizational resilience was (β = –0.066, p = 0.209), indicating a negative and insignificant effect on the organizational communication on organizational resilience. The results showed that the H2 was not supported. The path coefficient for the organizational perception of community on organizational resilience was (β = 0.367, p = 0.000). Thus, the effect of the community's perception on organizational resilience was positive and significant and supports

Table 6b: Factor Loadings (After Removal)

Item	Loading	Item	Loading
CMM1	0.770		
CMM2	0.816		
CMM3	0.776		
CMM4	0.765		
CMM5	0.833		
COM1	0.866		
COM2	0.828		
COM3	0.864		
COM4	0.877		
COM5	0.893		
CIT1	0.825		
CIT2	0.786	**ORE2**	0.751
CIT3	0.844	**ORE5**	0.744
CIT4	0.741	**ORE8**	0.797
CIT5	0.772	**ORE9**	0.773
CMP2	0.822	**ORE10**	0.752
CMP3	0.848		
CMP4	0.765		
CMP5	0.787		
CON1	0.815		
CON2	0.789		
CON3	0.841		
CON4	0.877		
CON5	0.893		
COD1	0.713		
COD2	0.843		
COD3	0.857		
COD4	0.853		
COD5	0.753		

H3. The path coefficient for the organizational competency on the organizational resilience was (β = 0.122, *p* = 0.055), indicating positive effect of the competency on the organizational resilience and provided the evidence to support H4. The path of coefficient for the connection to the organizational resilience was (β = 0.117, *p* = 0.033), showing that the effect of the organizational connection's perception on the organizational resilience was positive and significant, and supported H5. The path coefficient for the coordination to the organizational resilience was (β = 0.226, *p* = 0.009), depicting the effect of the organizational coordination on the organizational resilience was positive and significant. It provided the evidence to support H6. Path coefficients results are shown in Table 7.

The bootstrapping analysis revealed that all four effects, namely community (t value = 5.072), competency (t = 1.601), connection (t = 1.844), (β = 0.117) and coordination (t = 2.410) were significant with t-values respectively. Nonetheless, for commitment and communication behavioural stream, the findings were t = 1.013 and t-value = 0.810, which was less than 1.645. Therefore, it can be concluded that there was no relationship between commitment, communication and organisation resilience.

Discussion

All MSC status companies are similar as they produce goods and services to drive the economy. However, they differ in their capacities to be resilient. The present study argues that resilience is due to the collective intrinsic resources available to the enterprise in the form of their people and the connections they build while working at the enterprise. Organizational disaster is due to high human error that has raised the question on the effectiveness of behavioural streams. This study has positive significance that employee behavioural streams played positive roles in supporting resilience in MSC status companies. Hence, the new resilience model developed in this research allows MSC status companies to further improve their organization resilience initiatives by giving employees directions on work processes that could reduce cognitive load which supports unique and complex situations.

This study was designed with six hypotheses: collective commitment, communication, community, competency, connection and organizational coordination to determine the effect of the organizational resilience among the MSC status companies, registered with the MDEC in Malaysia. The major issue addressed in this research was the role of employee behaviour that reduces human error in the workplace. It is an important issue as present statistics have revealed that human error is the major contributor of organizational disaster and failure, particularly in creating well balanced resilient employees, i.e. with the practice of clear task directions. Based on the seven behavioural streams (community, competency, connection, commitment, communication, coordination, and consideration) several recommendations are made to establish proper resilience at MSC status companies in Malaysia. The results were specifically developed with the aim of improving organizational resilience, a strategic pillar of Sendai Framework for Disaster Reduction. Disaster risk reduction's scope has been substantially extended to concentrate on both natural and man-made hazards. Sendai Framework's goal is to accomplish the numerous outcomes within 15 years.

Table 6c. Outer Loading and Cross Loadings

	CMM	COM	CIT	CMP	CON	COD	ORE
CMM1	*0.869*	0.323	0.396	0.547	0.159	0.146	0.223
CMM2	*0.821*	0.472	0.491	0.598	0.177	0.209	0.230
CMM3	*0.873*	0.382	0.400	0.448	0.305	0.070	0.288
CMM4	*0.878*	0.495	0.457	0.483	0.291	-0.085	0.163
CMM5	*0.883*	0.463	0.683	0.575	0.349	0.102	0.386
COM1	0.458	*0.704*	0.326	0.285	0.222	0.148	0.347
COM2	0.541	*0.831*	0.357	0.443	0.266	0.055	0.334
COM3	0.470	*0.860*	0..16	0.401	0.231	-0.084	0.258
COM4	0.445	*0.711*	0.314	0.420	0.278	-0.063	0.291
COM5	0.531	*0.779*	0.548	0.320	0.305	0.079	0.430
CIT1	0.110	0.256	*0.784*	0.512	0.083	0.385	0.197
CIT2	0.230	0.210	*0.822*	0.547	0.119	0.436	0.232
CIT3	0.255	0.252	*0.757*	0.598	0.103	0.450	0.240
CIT4	0.226	0.212	*0.752*	0.448	-0.001	0.449	0.124
CIT5	0.220	0.214	*0.840*	0.483	0.036	0.429	0.219
CMP2	0.472	0.107	0.267	*0.795*	0.318	-0.030	0.185
CMP3	0.382	0.072	0.255	*0.724*	0.159	0.146	0.223
CMP4	0.495	0.009	0.226	*0.666*	0.177	0.209	0.230
CMP5	0.463	0.082	0.305	*0.795*	0.305	0.070	0.288
CON1	0.260	0.294	0.288	0.471	*0.829*	-0.085	0.163
CON2	0.317	0.407	0.108	0.524	*0.824*	0.102	0.386
CON3	0.220	0.498	0.022	0.453	*0.836*	0.148	0.347
CON4	0.255	0.465	-0.018	0.491	*0.752*	0.055	0.334
CON5	0.311	0.452	0.056	0.322	*0.724*	-0.084	0.258
COD1	0.168	0.192	0.342	0.297	0.204	0.724	0.185
COD2	0.067	0.178	0.177	0.237	0.179	*0.741*	0.127
COD3	0.017	0.090	0.323	0.246	-0.115	*0.840*	0.140
COD4	0.011	0.198	0.381	0.334	-0.183	*0.863*	0.169
COD5	-0.006	0.209	0.353	0.285	-0.210	*0.890*	0.160
ORE2	0.192	0.256	0.275	0.169	0.291	0.237	*0.814*
ORE5	0.102	0.210	0.267	0.063	0.149	0.144	*0.785*
ORE8	0.203	0.252	0.255	0.106	0.154	0.238	*0.678*
ORE9	0.239	0.212	0.226	0.108	0.150	0.061	*0.744*
ORE10	0.218	0.214	0.305	0.273	0.146	0.119	*0.777*

Table 6d: *Fornell-Larcker Criterion*

CMM	**0.865**						
COM	0.267	**0.780**					
CIT	0.620	0.434	**0.792**				
CMP	0.567	0.473	0.676	**0.743**			
CON	0.341	0.096	0.331	0.357	**0.794**		
COD	0.023	0.546	0.048	0.130	-0.218	**0.836**	
ORE	0.259	0.268	0.430	0.373	0.204	0.196	**0.732**

Table 6e: *Heterotrait-Monotrait Ratios*

CMM	—						
COM	0.302	—					
CIT	0.699	0.504	—				
CMP	0.664	0.551	0.778	—			
CON	0.390	0.118	0.389	0.420	—		
COD	0.057	0.652	0.150	0.219	0.259	—	
ORE	0.289	0.308	0.493	0.422	0.240	0.235	—

Note: CMM: Commitment; COM: Communication; CIT: Community; CMP: Competency; CON: Connection; COD: Coordination; ORE: Organisational Resilience; AVE: Average Variance extracted

Table 7. Hypothesis testing

Hypothesis		Coefficient	t-values	Sig.	f^2	Decision
H1	CMM → ORE	–0.065	1.013	0.156	0.003	*Not supported*
H2	COM → ORE	–0.066	0.810	0.209	0.003	*Not supported*
H3	CIT → ORE	0.367	5.072	0.000	0.076	*Supported*
H4	CMP → ORE	0.122	1.601	0.055	0.009	*Supported*
H5	CON → ORE	0.117	1.844	0.033	0.014	*Supported*
H6	COD → ORE	0.226	2.410	0.008	0.041	*Supported*

Note: CMM: Commitment; COM: Communication; CIT: Community; CMP: Competency; CON: Connection; COD: Coordination; ORE: Organisational Resilience; AVE: Average Variance extracted

To accomplish the projected outcomes, several goals must be considered:

1. To improve people-centred multi-hazard, multisectoral forecasting systems and design systems like that via a participatory activity and adapt them based on the requirements of users that support simple and low-cost hazard facilities (Irfan and Naeem 2020).

2. To tackle prevailing challenges and be ready for future ones by concentrating on monitoring, via technology and research and enhancing disaster preparedness, response, and recovery (Tasic et al. 2019).

3. To encourage mutual learning and trade of good practices and information via voluntary and self-initiated peer review amongst concerned employees, stakeholders, organizations, and government agencies (Therese Sonnet 2016) .

The first hypothesis was to evaluate the effect of the perception of collective commitment that prevails in the enterprise on enterprise resilience. The result was found to be negative and insignificant suggesting that the enterprise level commitment is not contributing to the enterprise resilience (Britt et al., 2016). This finding, one could argue is due to the possibility that during a crisis, priorities shift and hence the main focus is business continuity (Braun et al. 2017). Not everyone in the organization are necessarily critical for business continuity. During the COVID-19 experience, we find that organizations very quickly issues policies to classify staff as either being critical or otherwise, with the critical employees being asked to continue with work, while others are subject to movement control order (Irfan and Naeem 2020). Global efforts have been exerted to prevent the spreading of the disease through political decisions together with personal behaviours, which depend on awareness of the public. Therefore, during such a crisis employees knowledge, perceptions and attitude towards the COVID-19 disease lead to make sure that business continues (Abdelhafiz et al. 2020).

The second hypothesis was to check the effect of communication on enterprise resilience. Communication was found to have no positive effect on enterprise resilience as the result was negative and insignificant. This leads us to posit that communication has no capacity to influence enterprise resilience. In this context, we find that during a crisis situation, the form of communication changes from human-centred to technology-centred communication which could potentially dilute both the breadth and depth of social based communication(Tregidga, Milne, and Lehman 2012). In addition, we also observed from the COVID-19 experience that not everyone has a common access to Internet and technology infrastructure and this is further exuberated by employees who travelled back to their hometowns in rural areas (with poorly internet/ communication access) (Lauridsen et al. 2016). As such, we argue that while one would expect communications to play a vital role in organizational resilience, this can only be achieved in the event of the establishment of proper policies (tested during normal time) that govern effective communication during a crisis situation (Lin et al. 2014).

The third hypotheses evaluate the effect of the collective community perception on enterprise resilience. The finding supports the claim that collective community perception has a positive and significant effect on enterprise resilience (Burnard and Bhamra 2011). The finding is in line with earlier studies that gauged the effect of the collective community perception on enterprise resilience (Lengnick-Hall, Beck, and Lengnick-Hall 2011). In this context we suggest that although collective commitment and communication may not be seamless during a pandemic, in general employees tend to perceive that organizations will do what is best to remain resilient.

The fourth hypotheses evaluate the effect of the collective competency perception on enterprise resilience. The finding supports the claim that collective community perception has a positive and significant effect on enterprise resilience. The finding is in line with the earlier studies that gauged the effect of the collective

community perception on enterprise resilience (Caralli et al. 2010). Here we argue that during a crisis situation, employees general feel that their respective competencies will be used by management to ensure organizational resilience.

The fifth hypotheses evaluate the effect of the collective connection perception on enterprise resilience. The finding supports the claim that collective community perception has a positive and significant effect on enterprise resilience. The finding is in line with earlier studies that evaluated the effect of the collective connection perception on enterprise resilience (Lengnick-Hall et al., 2011).

The sixth hypotheses evaluate the effect of the collective coordination perception on enterprise resilience. The finding supports the claim that collective community perception has a positive and significant effect on enterprise resilience (Kostyuchenko et al. 2020).

This study's results revealed that out of the six behavioural streams, four (community, competency, connection and coordination) had a positive relationship with organisation resilience. The t-statistics values for these six behavioural streams were above 1.645 with significance at 90% confidence level. Meanwhile, communication and commitment behavioural stream had no significant relationship with organisational resilience. The finding is in line with the earlier studies that gauged the effect of the collective coordination perception on enterprise resilience (Mallak 1998). This echoes our earlier findings in that when collective competencies are used effectively during a crisis situation, this would increase the overall level of collective coordination in the organization hence increasing resilience. The proposed new theoretical resilience model is illustrated in Figure 2. This framework consists of a new theory that considers the apparent role of employee behaviour and organisational resilience.

Even though the significance of organisational resilience is recognised by researchers, the underlying relationship of the concept is still ambiguous (Abdullah, Noor, & Ibrahim, 2013). Thus, this research intended to illuminate the issue by conceptualising the relationship among behavioural stream antecedents, hence, contributing towards a better theoretical comprehension (Annarelli & Nonino, 2016; Sutcliffe & Vogus, 2007). Next, this study also targeted to bring improvement to the socio-psychological theory by outlining employees' regressive behaviour in the social context, in terms of organisational resilience, i.e. contextual, behavioural, and cognitive. Not only that, this research intended to verify that the six behavioural streams, namely, community, competency, connection, commitment, communication and coordination encourage resilience. Particularly, adaptive behaviour was found to be perfect in stimulating creativity to develop organisational resilience during this current difficult situation such as COVID-19 (Sonnet, 2016). Additionally, this research concentrated on factors related to resilience based on Horne and Orr's (1998) behavioural streams. The findings may help in increasing employees' perception and self-assurance in dealing with COVID-19 pandemic situation and strengthening resilience.

Conclusion

This study is a mindful effort to enhance understanding of organization resilience through building and testing new models (Tasic et al. 2019). By taking organizational resilience as the capacity stance , we connect the organizational collective perception of the people to the organizational resilience. The findings of the study confirm substantially that the collective perception of the organizational employee towards the organizational community, competency, connection, and coordination have a significant effect on the perception of organizational resilience. This study confirms that people's perception as a resource positively enhances organizational resilience .This study contributes to the theory to offer a collective perception framework combined by the divergent understandings of the organizational resilience to support the findings that how the collective perception framework helps to contribute to the organizational resilience if taken in full.

This study contributes to the existing efforts to explore and enhance the understanding of organizational resilience as a process that can be gauged and improved over the period of the time. The outcome of the study implies to the managers and the policymakers that the most important resource of an organization are the people. The positive synergy between the employees enables the organization to become resilient. Therefore, management needs to implement strategies to have a more resilient organization. Moreover, the policymaker needs to establish a benchmarking framework that social dialogue and social partners play in the control of the virus at the workplace and beyond, but also to avoid massive job losses in the short and medium term (Wang and Wang 2020). Joint responsibility is needed for dialogue to foster stability. A more resilient organization in a state or country enhances the well-being of the community as well as businesses working under normal conditions can sure of

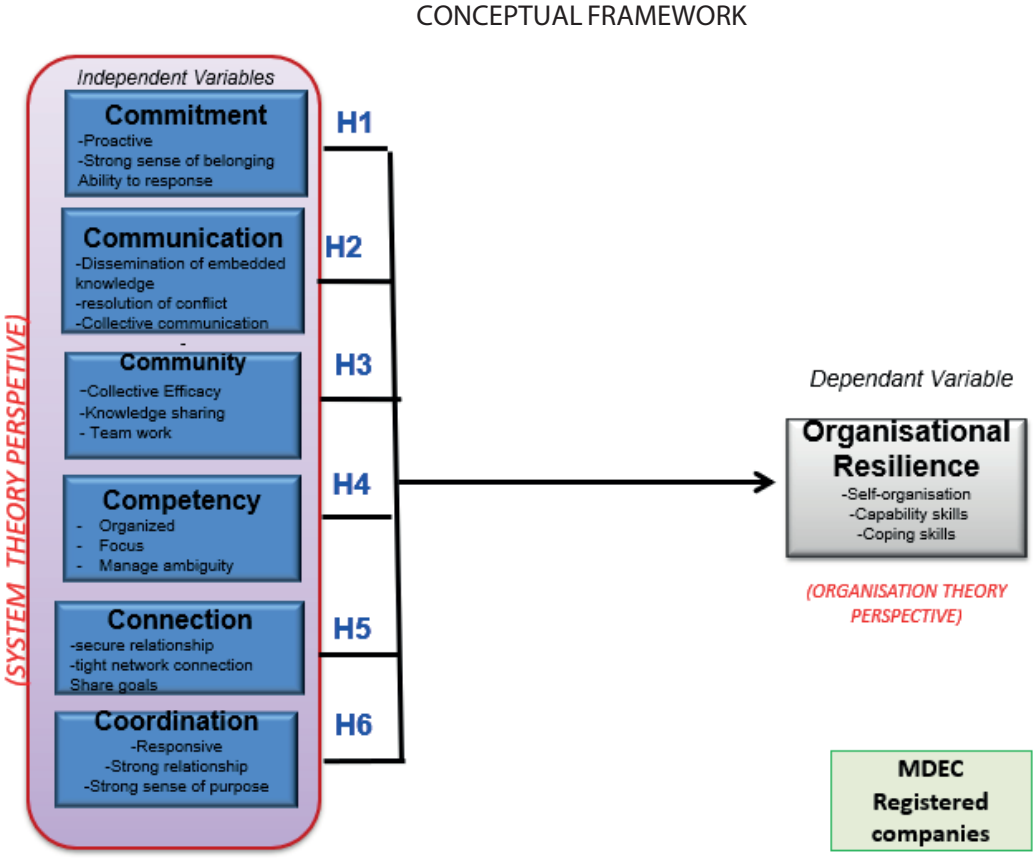

Figure 2: Organisation Resilience Framework

the provision of prosperity as well (Zautra, Arewasikporn, and Davis 2010). Addressing the immediate consequences of the crisis should be accompanied by a commitment to give priority attention in the longer term to protect and promote employment through sustainable enterprises to promote full respect for labour standards and decent work (Mollona et al. 2019). Workers and employers in organizations are actively engaged in mapping the impact of the crisis on their members, in order to better understand their concerns and needs, advise them during these critical moments, influence policy discussions related to the COVID-19 crisis, and reach bipartite and tripartite consensus, when possible (International Organization of Employers 2020).

One of the limitations in this study is the dimensions of the resilient origination such as role clarity, response mechanism or other structural factors could not be measured. Future research could extend the model by incorporating these factors to enhance the model contribution to have a greater resilience. It must explore in detail on how communication and commitment can make a positive impact on organisational resilience. Additionally, future research must explore the role of time on how resilience as capacity grows or falls with the organization in a given time period. This provides the opportunity for management to start looking at resilience as a resource that needs to enhance over time.

Competing Interests Statement

The authors have declared that no competing interest exists.

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Impact of the First Phase of Movement Control Order during the COVID-19 pandemic in Malaysia on purchasing behavior of Malaysian Consumers

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ABSTRACT

With the COVID-19 pandemic, countries around the world are affected and taking drastic steps to curb the spread of the virus by implementing Movement Control Order (MCO) and lockdowns. The feeling of depression and uncertainty of many Malaysians have resulted into a sense of panic and fear. The aim of this study is to explore Malaysian consumers' consumption behavior during the first phase of MCO due to COVID-19. This study employed Theory Planned Behavior as an underpinning theory to explain consumer behavior during this pandemic. 231 respondents were chosen using convenience sampling technique. The data was analyzed and interpreted using the statistical package SPSS and version 3.2.9 of the Structural Equation Modeling Partial Least Square (SEM-PLS). The study showed mass and social medias inputs were influential in assessing the severity of the crisis, and thereby impacting the shopping experience. This study confirmed that Malaysian Fear of Missing Out (FoMO) was a vital variable in purchasing behavior during the MCO's first phase.

Keywords: COVID-19, House-hold essentials, Shopping Experience, Purchasing Behavior, FoMO, Mass Media, Social Media.

Introduction

In January 2020, the World Health Organization (WHO) declared the outbreak of the novel coronavirus infection, COVID-19, as a public health emergency of worldwide concern (World Health Organization, 2020a). WHO declared COVID-19 as a pandemic in March 2020 (World Health Organization, 2020b). As COVID-19 pandemic continues to spread across the globe, the world order has been disrupted including how consumers behave in purchasing daily essentials. Governments around the world are taking stringent precautions by imposing strict restrictions, quarantine, wearing of mask and social distancing as there is no vaccine to curb the pandemic. The imposed ruling by governments in countries which are affected have directly impacted on consumption patterns (Roy et al., 2020). In Malaysia, upon the Prime Minister's announcement of the first phase of Movement Control Order (MCO) from March 18th to April 1st 2020, the Malaysian public panicked into a purchasing frenzy. Although the Malaysian government has consistently addressed the nation with reminders not to panic and with assurance that there is sufficient daily necessities, especially food; the various postings about long queues and empty shelves in supermarkets continued to circulate on social media causing panic among Malaysian consumers.

Previous studies on behavioral studies during a pandemic, had shown that an epidemic or pandemic outbreak can

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cause major disruption on production, investment and consumer expenditures (Jung et al., 2016). Therefore, understanding the indirect, but strong effects of pandemics on purchasing behavior of essential goods are crucial and would provide important implications and guidance for policymakers, as well as practitioners aiming to counteract panic buying. However, little research has investigated how pandemic outbreak affects individual shopping behaviors and consumption, especially in the Malaysian context. Previous studies have generally focused on the total burden of epidemics on populations based on aggregate data and on micro-economic perspective (Gubler, 2002; Jung et al., 2016).

Consumers' opinions vary according to circumstances; degree of severity, patterns of the shopping channels, whether online and offline have impact on consumer behavior (Smith, 2009). A research in the Netherlands has pointed out that a number of outbreak events have triggered perceived risk in purchasing behavior at supermarkets and supply food chains (Hutjens, 2012). Meanwhile, another recent research in Bangalore (India) has shown that 50% of their consumers spent time searching for information and purchasing products via online platforms (Shyam and Abirami, 2020).

The above study on purchasing behavior related to COVID-19 (Shyam and Abirami, 2020) has resulted in panic situations among consumers in Bangalore, India. The findings of this study concurred with previous studies on purchasing behavior of routine products in bulk during COVID-19. Meanwhile, the findings from Hutjens (2012) study have gained a holistic view of consumer behavior in the long-term perspective of a crisis. This research focused primarily on consumer behavior in consumption of products due to the outbreak of an animal disease in the Netherlands from 2003 to 2009, which included outbreaks of SARS virus and H1N1 influenza. Numerous multi-dimensional approaches are being used in various magnitude time series to evaluate the factors that impact consumer behavior such as the event, perception of risk, fear, and intent of behavioral changes. Thus, it can also be postulated that the purchasing behavior will change during a pandemic like COVID-19.

Therefore, due to the parallels in the cases and associated risk factors, the Hutjens (2012) research adapted with modification to fit the Malaysian context is deemed appropriate for this study. The aim of this study is to identify changes in Malaysian purchasing behavior and to investigate the indirect or mediators' role between crisis magnitude and purchasing behavior during the COVID-19 first phase of the MCO. This study will significantly close the research gap in understanding changes in Malaysian consumer purchasing behavior of essential household goods during a pandemic crisis such as COVID-19, and the mediation effect of shopping experience and the Fear of Missing Out (FoMO).

Literature Review

Recently, numerous disease outbreaks such as SARS, HINI influenza (Hutjens, 2012; Roy et al., 2020; Shyam and Abirami, 2020) and now the COVID-19 pandemic have caused global consumers to have a high level of anxiety and panic that is obviously shown in their shopping patterns. To further understand the phenomenon of this new buying pattern, various theories were examined. After an extensive review of literature, the most appropriate theory identified to underpin this study is the Theory of Planned Behavior (TPB) (Ajzen, 1985).

TPB identifies three basic factors that affect an individual's intended behavior including attitude, subject norms, and perceived behavioral control. In making decisions in conditions of natural disasters or epidemics, many studies have used this model as a basic theory to understand consumers' buying intentions during uncertain times (Daellenbach, Parkinson, and Krisjanous, 2018; Deng et al., 2017; Hutjens, 2012; Paton, 2003). Some studies added factors or incorporated elements into the model to effectively explain the relationships between the research variables (Gkargkavouzi, Halkos, and Matsiori, 2019; LópezMosquera and Sánchez, 2012) and the research results of these studies have proven their hypotheses effectively. Further, many previous studies have suggested adding other relevant variables such as environmental factors while studying consumer's intentions (Pavlou and Fygenson, 2006; Hsu and Huang, 2012; Chen and Tung, 2014; Choi and Johnson, 2019), and in this study variables such as media, crisis magnitude, shopping experience and Fear of Missing Out (FoMO) are included to measure purchasing behavior during the first phase of MCO in Malaysia.

The Theory of Planned Behavior (TPB) is used to explain the changes in consumer behavior due to drastic changes that increase irrational buying due to of fear. Two of the three important pillars used in TPB, subjective norm and perceived behavioral control, describe changes in consumer behavior due to a crisis (Ajzen, 2002) which impacts the purchase intention or behavior.

Consumers' decisions are influenced by social norms known as subjective norm in TPB (Ajzen, 1985).

Consumers or individuals usual act on or react to how they perceive what others are doing and approve/ disapprove (Cialdini and Goldstein, 2004; Bavel et al., 2020). Informational influence occurs when people use others' behavior as input for reasonable interpretations and responses (Bikhchandani, Hirshleifer, and Welch, 1998) and this is stronger when people are uncertain and outcomes are important (Baron, Vandello, and Brunsman, 1996). Normative influence occurs when people conform to social approval and is associated with more conformity in public than private (Sowden et al., 2018).

Performance of a behavior is influenced by the presence of adequate resources and ability to control barriers to behaviors, such as money, time and knowledge (Ajzen, 1985). The more resources and fewer obstacles individuals perceive, the greater their perceived behavioral control and the stronger their intention to perform behaviors (Ajzen and Madden, 1986). This study examined the fear of lack of goods sold, influences on the purchasing behavior of consumers, and its effects on the shopping experience during the first phase of MCO in Malaysia.

The research framework of this study is based on the Theory of Planned Behavior (Ajzen, 1985) and an adaptation of Hutjens (2012) which is one of the most recent and relevant to meeting the objectives of this study. The Hutjens (2012) study is also based on TPB (Ajzen, 1985) and factors such as crisis magnitude, media and risk were adapted from Rountree and Land (1996) and Warr (1987).

Variables in the framework

Media has been proven to be a very important element in influencing consumers' decision making process (Taining, 2012; Sema, 2013). Social media and sharing experiences on a specific product, service and event could have a big impact on the fear element for consumers (Argan and Argan, 2018) such as empty shelves, long waiting queues and "out of stock" statement. Further, the authors have agreed that social media played an important role in molding this fear, as well as the fear of missing out (FoMO) among consumers. Meanwhile, mass media include all methods of transmitting messages such as newspapers, radio, television and the internet (Pasek et al., 2006). According to Aggarwal et al., (1998), mass media is 'informational' in nature. Mass media has some advantages represented by its ability to reach a large audience rapidly, create knowledge and spread information (Rogers, 1995). The significant influence of mass media on subjective norm has been validated in various studies (Conner et al., 2001; Limayem et al., 2000; Zolait and Sulaiman, 2009). This study explored the effect of mass media on the crisis magnitude perceived by the consumers.

Crisis magnitude is a concept which characterizes an international crisis as a whole (Ben-Yehuda and Sandler, 1998). It focuses on the extent of disruption which takes place during the crisis period and identifies three specific domains in which disruption occurs. Crisis magnitude, an indicator of how serious is the COVID-19 pandemic from the consumer's perspective from the input received via mass media and social media, is one of the independent variable in this study. In this study, it is assumed that changes in the overall magnitude of crisis reflect shifts in patterns of shopping experience in the first phase of MCO in Malaysia.

Literature has defined shopping experience as an essential enjoyable personal and social activity (Backstorm, 2011). Customer shopping experience emerges as a complex encounter between two following sets of factors: (1) spatial–material (including physical layouts, objects and atmospheric cues) and (2) social dynamics (including cultural, emotional, historical and cognitive aspects) (Ali, 2015). Shopping experience attributes which influence buying behavior include enjoyment, convenience and social interaction (Jarvenpaa and Todd, 1997). Past studies have confirmed that negative shopping experience can lead to a stressful environment due to fears about daily consumption products, as well as purchasing pattern (Baker, Gentry, and Rittenburg, 2005). Yet, there is scarce literature on consumer experiences during a pandemic crisis.

This research will further investigate the impact of FoMO (direct, indirect or mediators) on purchase behavior during a crisis. Previous studies have shown that, due to FoMO, people show a strong tendency and willingness to change their behavior to follow and imitate the collective or group, reflecting the desire not to be separated from the mainstream, and to be the same as others (Kang, Cui and Son, 2019). Previous studies have also shown that individuals are frequently affected by decisions of others and prefer to follow traditional community social values and behaviours (Kastanakis and Balabanis, 2012; Leary et al., 2013). These emotions stem from the desire to integrate into the mainstream society and the fear caused by lack of household products during the crisis. FoMO-related research have identified these emotions mainly as a sort of mental state and emotional change that could lead to excessive use of social media, smartphone, and alcohol consumption (Abel, Buff and Burr, 2016; Hodkinson, 2016).

The research framework used in this study (Ajzen, 1985; Hutjens, 2012) shows the relationship between an event and behavioral intention with shopping experience and FoMO as mediators. The media amplification (mass media and social media) impacts on personal relevance and an anxious state of the crisis magnitude. Although Zajonc (1980) states that cognition does not necessarily precede affect, literature with regard to risk perception and fear implies that risk perception precedes fear and not the other way around (Rountree and Land, 1996; Warr, 1987). The current study will follow the approach as defined by Hutjens (2012) which was based on a study by Rountree and Land (1996) and Warr (1987).

The following 14 hypotheses and the research framework was developed based on the discussion above:

H1: Mass media positively influences crisis magnitude during the first phase of MCO in Malaysia due to COVID-19

H2: Social media positively influences crisis magnitude during the first phase of MCO in Malaysia due to COVID-19

H3: Crisis magnitude negatively influences shopping experience during the first phase of MCO in Malaysia due to COVID-19

H4: Shopping experience positively influences FoMO during the first phase of MCO in Malaysia due to COVID-19

H5: FoMo positively influences purchasing behavior during the first phase of MCO in Malaysia due to COVID-19

H6: Mass media mediates crisis magnitude on shopping experience during the first phase of MCO in Malaysia due to COVID-19

H7: Social media mediates crisis magnitude on shopping experience during the first phase of MCO in Malaysia due to COVID-19

H8: Mass media mediates crisis magnitude and shopping experience on FoMO during the first phase of MCO in Malaysia due to COVID-19

H9: Social media mediates crisis magnitude and shopping experience on FoMO during the first phase of MCO in Malaysia due to COVID-19

H10: Crisis magnitude mediates shopping experience on FoMO during the first phase of MCO in Malaysia due to COVID-19

H11: Shopping experience mediates FoMO on purchasing behavior during the first phase of MCO in Malaysia due to COVID-19

H12: Crisis magnitude mediates shopping experience and FoMO on purchasing behavior during the first phase of MCO in Malaysia due to COVID-19

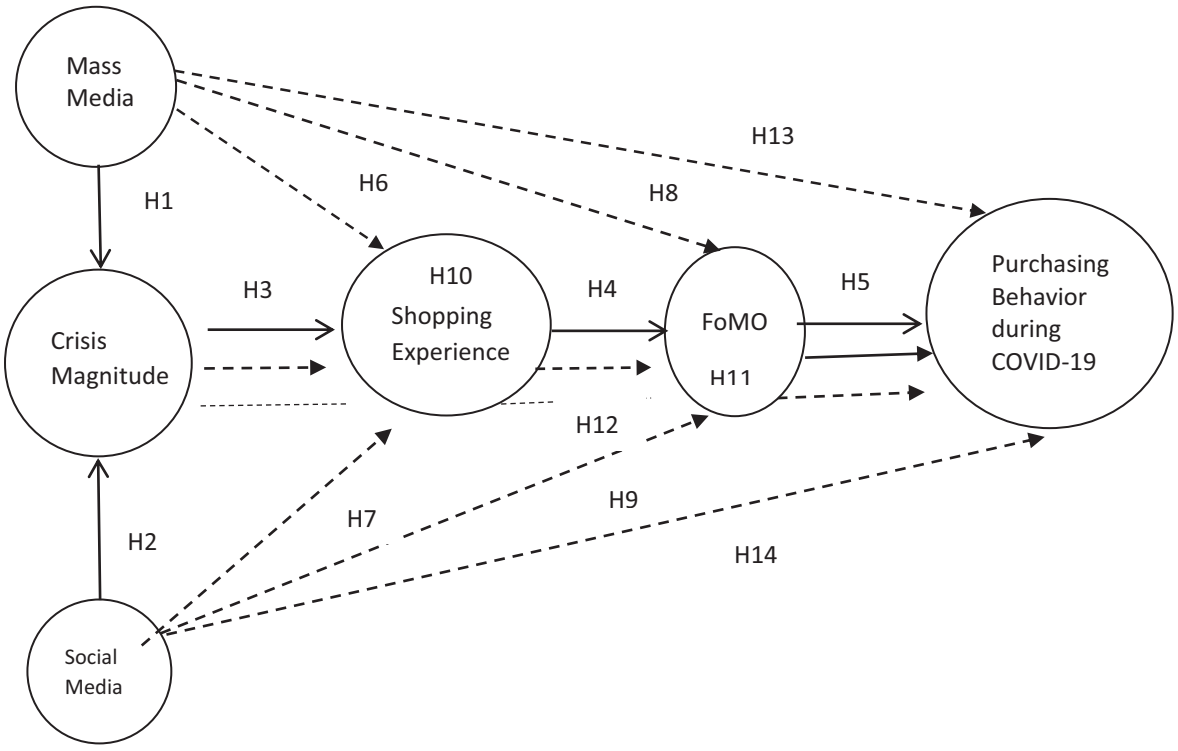

Figure 1: Proposed Research Framework adapted from Hutjens (2012)

H13: Mass media mediates crisis magnitude, shopping experience and FoMO on purchasing behavior during the first phase of MCO in Malaysia due to COVID-19

H14: Social media mediates crisis magnitude, shopping experience and FoMO on purchasing behavior during the first phase of MCO in Malaysia due to COVID-19

Methodology

Research design, Instruments, Sampling and Data collection procedures

In order to understand purchasing behavior of Malaysians during COVID-19 MCO, this study was designed and conducted through quantitative method. Convenience sampling technique was employed and 231 respondents were selected as sample. This sample size was obtained by using tabulation Krejcie and Morgan (1970), with maximization of the 384 sample size and 212,257 consumer spending population in Malaysia (Statistics Department of Malaysia, 2020). Since this is on-going research work, 237 sets of questionnaire were distributed during the first phase and 231 sets were approved as the rejected sets had more than 50 percent of data missing in the questionnaire.

The questionnaire was adapted from various sources such as crisis magnitude (Ben-Yehuda and Sandler, 1998), mass media (Shoaib et al., 2012), social media (Voramontri and Klieb, 2018), shopping experiences (Thomas and Harry, 2004), FoMO (Kang, Cui and Son, 2019) and purchasing behavior (Ajzen, 2002; Vinodh et al., 2018). The questions were measured in 7 point Likert scale (purchasing behavior, FoMO) and 7 point sematic scale (crisis magnitude, mass media, social media, shopping experience. A pilot was performed with ten (10) respondents to evaluate respondents' understanding of the questions before the actual data collection process. Then, the questionnaire was constructed by using Google Form and distributed via social media (like Facebook, Twitter and WhatsApp) to reach out to the respondents. It took about two weeks to complete data collection (March 20, 2020 to April 1, 2020). Finally, data was analyzed through statistical package SPSS and Structural Equation Modelling version 3.2.9 (PLS-SEM) (Hair et al., 2017; Hair et al., 2018). The benefit of using PLS-SEM for testing mediation variables is to reduce biasness and the bootstrapping procedure increases data reliability through no assumptions about the distribution of the constructs and sampling methods (Hair et al., 2017).

Results

Respondent's information

The respondents who were Malaysian consumers were 66 percent (152) females compared to 34 percent (79) male consumers. All of the respondents were aged from under 21 to over 70 years. There was a representative balance from age groups; the largest respondents were from 21 to 30 years (36%), followed by 41 to 50 years (22%), 31 to 40 years (20%), and 51 to 60 years (10%). The lowest age group was over 70 years old (0.9%).

Forty-one percent (41 percent) of respondents were ethnic Malays, Indians (36 percent), Chinese (18 percent) and minority ethnic (10 percent). Minority ethnicity is represented by Sikh, Bajau (Sabah) and Iban (Sarawak). The majority of Malaysian household members in one family were over six persons with 33 percent (75), four persons with 20 percent (45), five persons with 18 percent (42) and the lowest constituting 3.5 percent (8).

The Malaysian consumer income ranged from below RM 12,000 to above RM 120,000 annually. The first group was the lower income category of 26 percent (60) of below RM 12,000, and the second group was the medium income group with 24.7 percent (57) from RM 60,000 to RM 119,999. A small percentage of Malaysians respondents' were infected by COVID-19 (5 percent or 11) and their family members (6 percent or 14) during the first phrase of MCO (refer to Table 1). The data clearly showed that there were two broad income groups in Malaysia's consumer market; one was lower income, and another was high income.

Hypotheses testing

Before the measurement and structural data was performed in PLS-SEM, common method variance (CMV) analysis was the initial step to test data biasness. Data was analysed using Harman's single factor to test factors that explain the majority of variance (Podsakoff et al., 2003). The first factor explained 47.23 of the variables below threshold 50% (MacKenzie and Podsakoff, 2012). Therefore, there was no biasness issue in this study.

Assessment of the measurement model

The assessment of the measurement model involves evaluating reliability (i.e. composite reliability or CR) and validity (i.e. convergent and discriminant validity). The

Table 1: Respondent's profile

No	Demography Items	Frequency	Percentages (100%)
1.	Gender		
	Male	79	34.2
	Female	152	65.8
2.	Age groups		
	< 20 years	19	8.2
	21-30 years	82	35.5
	31-40 years	47	20.3
	41-50 years	52	22.5
	51-60 years	23	10.0
	61-70 years	6	2.6
	> 70 years	2	.9
3	Ethnic		
	Malays	95	41.1
	Chinese	41	17.8
	Indian	73	31.6
	Others (i.e. Sikh, Iban and Bajau)	22	9.5
4	Household member		
	1 people	8	3.5
	2 people	25	10.8
	3 people	36	15.6
	4 people	45	19.5
	5 people	42	18.2
	More than 5 people	75	32.5
5	Annual Income		
	< RM 12,000	60	26.0
	RM12,000 – RM 23,999	33	14.3
	RM24,000-RM35,999	26	11.3
	RM36,000-RM59,999	28	12.1
	RM60,000-RM119,999	57	24.7
	>RM120,000	27	11.7
6	Individually infected by COVID-19		
	Yes	11	4.76
	No	220	95.53
7	Family members infected by COVID-19		
	Yes	14	6.06
	No	217	93.4
		231	100

loading factors, CR and Cronbach's alpha (CA) values should be above threshold point 0.7 (Hair et al., 2017; Becker, Rai, and Rigdon, 2013). In this study, all the items of the construct values were above threshold point above 0.7 (Table 2). The average variance extracted (AVE) values ranged from 0.630 to 0.811 which are higher than the cut-off point 0.5, and indicates that the observed variables can measure the latent variables and the convergent validity of each construct. Collinearity issues were tested through variance inflation factors (VIF), and all the items were below threshold value of 3.3 or below 5 (refer to Table 2) (Diamantopoulos and Siguaw, 2006). Therefore, we concluded that the collinearity level for this study is low. The R-squared @ R^2 and GoF model fit index (SRMR metric or Standardized Root Mean Square Residual) are included in the Table 2 with R^2 values for crisis magnitude (0.238), shopping experience (0.042), FoMO (0.035) and purchasing behaviour during COVID-19 (0.198). The PLS-SEM analysis was used to test the prediction model with theory; therefore the model fit is not compulsory. Moreover, PLS-SEM scholars (Hair et al., 2018; Ringle et al., 2019) have encouraged including the goodness of model fit (SRMR) which is 0.073 for this study, lower than the cut-off point 0.08 (Henseler, Ringle and Sarstedt, 2015).

Table 3 represents the discriminant validity assessment model through Heterotrait-Monotrait of corrections (HTMT) measure, based on Henseler et al. (2015). HTMT model provides accurate information of the discriminant value compared to Fornell-Larcker criterion (Henseler et al., 2015). Therefore, the researchers selected discriminant validity HTMT result to explain the validity in this study. The results show that all the HTMT values were significantly lower than threshold value of HTMT <0.85 (Kline, 2010) (see Table 3).

Assessment of structural model

In the structural model, the analysis begins with bootstrapping procedure with 2,000 re-sample and the results are significant values and beta or path coefficients of 95% confidences intervals (lower limits @ LL, upper limits @ UL) and Q^2 (Ringle et al., 2018). The hypotheses in this study tested direct and indirect effects (mediation) relationships. Based on Table 2, all path coefficients (standard beta) are positive (β = 0.281, 0.304, 0.186, 0.445) except for H3 which is in a negative relationship (β=-0.204). The five direct hypotheses had positive network and significant relationships. The first hypothesis (H1) was tested and significantly supported the relationship between mass media and crisis magnitude (p = 0.009, LL = 0.085, UL=0.490). The second hypothesis was tested between the social media and crisis magnitude (p = 0.004, LL = 0.077, UL=0.495); and it was significantly supported. The third hypothesis was between crisis magnitude and shopping experience with a significant relationship (p = 0.007, LL = –0.004, UL = 0.030). The fourth hypothesis had a significant relationship between shopping experience and FoMO (p = 0.002. LL = 0.004, UL = 0.030). Similarly, the fifth hypothesis had a significant relationship between

Table 2: Assessment of the measurement model

Constructs	Items	Loading Factors	[a]VIF	[b]CA	rho_A	[c]CR	[d]AVE	[e]R^2
Crisis magnitude				0.812	0.824	0.887	0.724	0.263
	MCO (low relevancy-high relevancy)	0.851	1.922					
	Breakout (low relevancy-high relevancy)	0.856	2.106					
	Social Impact (low relevancy-high relevancy)	0.846	1.571					
FoMO				0.942	0.948	0.955	0.811	0.035
	Anxious	0.862	2.872					
	Keep tabs on others	0.911	3.750					
	Worried when others buy	0.932	4.945					
	Fear of others stocking up	0.872	2.885					
	Follow others shopping pattern	0.923	4.604					
Mass Media				0.827	0.833	0.885	0.659	
	MCO (small amount-big amount)	0.758	1.563					
	Government decision (small amount-big amount)	0.840	1.880					
	Economic (small amount-big amount)	0.825	1.941					
	Behavior of people (small amount-big amount)	0.822	1.853					
Purchasing behavior during COVID-19				0.842	0.870	0.891	0.673	0.198
	Purchase like others	0.812	2.104					
	Purchase the same quantity	0.855	1.882					
	Purchase at same place	0.771	1.981					
	Important to follow	0.840	1.883					
Shopping Experience				0.893	0.906	0.925	0.756	0.042
	Not Fun-Fun	0.893	3.606					
	Not Thrilling-Thrilling	0.790	1.559					
	Not delightful-Delightful	0.877	3.325					
	Unenjoyable-Enjoyable	0.914	3.762					
Social Media				0.857	0.884	0.895	0.630	
	MCO (small amount-big amount)	0.760	1.420					
	Government decision (small amount-big amount)	0.832	2.413					
	Economic (small amount-big amount)	0.798	2.322					
	Information (small amount-big amount)	0.817	2.070					
	Behavior of people (small amount-big amount)	0.759	1.870					

Note: [b] Cronbach's Alpha (CA); [c] Composite reliability (CR); [d] Average variance extracted (AVE); [a] Variance inflation factors (VIF), [e] R-squared (R^2)

the FoMO and purchasing behavior (p=0.000, LL=0.004, UL=0.030). Therefore, H1, H2, H3, H4 and H5 were supported and indirect effect hypotheses were tested from H6 to H15.

Further, this study examined the indirect or mediation effects (Preacher and Hayes, 2008; Hayes, 2018) of Malaysians purchasing behavior pattern during COVID-19. Specifically, there were three constructs that served as mediators which are crisis magnitude, shopping experience and FoMO on purchasing behavior during COVID-19. Based on Table 4, there were only two approaches that yielded significant relationship for hypotheses H7 and H11. The hypothesis (H7) on the effect of social media to crisis magnitude to shopping experience was (β = –0.063) and p = .043 (LL = –0.135, UL = –0.014). The eleventh hypothesis (H11) had indirect effect relationship with significant value between shopping experience to FoMO to purchasing behavior during COVID-19 (β = 0.083, p = 0.008, LL = 0.027, UL = 0.145). Other hypotheses like H6, H8, H9, H10, H12, H13 and H14 had negative path coefficient (β = –0.057, β = –0.011, β = –0.012, β = –0.038,

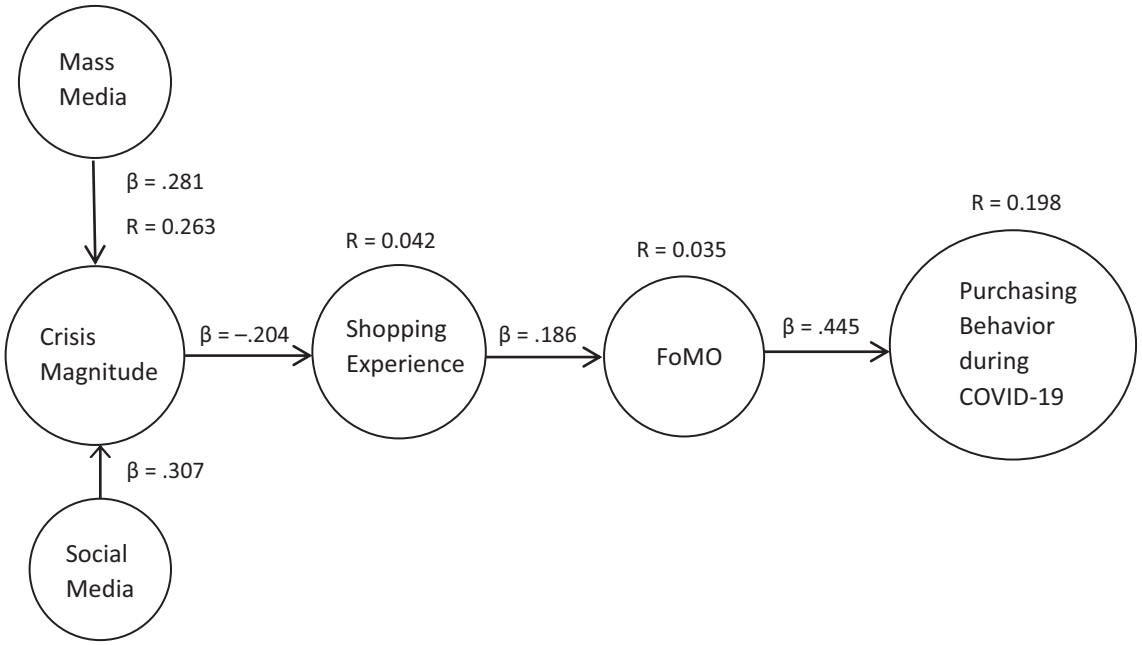

Figure 2: Purchasing behavior of Malaysian consumers during COVID-19

Table 3: Discriminant Validity (HTMT)

	Crisis magnitude	FoMO	Mass Media	Purchasing behavior during COVID-19	Shopping Experience	Social Media
Crisis magnitude						
FoMO	0.244					
Mass Media	0.524	0.216				
Purchasing behavior during COVID-19	0.116	0.478	0.084			
Shopping Experience	0.225	0.195	0.194	0.247		
Social Media	0.500	0.194	0.588	0.166	0.140	

β = –0.01, β = –0.005, β = –0.005) and insignificant relationship (p = 0.112, p = 0.232, p = 0.147, p = 0.084, p = 0.124, p = 0.270, p=0.196) (see Table 4). Therefore, indirect effects hypotheses H7 and H11 were supported and seven other hypotheses were not supported (see Table 4). Table 4 also show the effect sizes (f^2) result. According to Cohen (1988), weak effect sizes occur for all the approaches (0.036 to 0.246) in the analysis of purchasing behavior during COVID-19. Cohen (1988) evaluated effect size as 0.02, 0.15 and 0.35 representing small, medium and large effects respectively. Therefore, we concluded that the effect size in this study was between small (social media, mass media, crisis magnitude, shopping experience, purchasing behavior) and medium (FoMO). Another assessment in structural model is Q^2 or Q-squared known as the blindfolding-based cross validated redundancy measure. The result of Q^2 in this study ranged from crisis magnitude (0.166), mass media (0.026), purchasing behavior (0.121) and social media (0.026); as a rule of thumb Q^2 values high than 0 (Shmueli et al., 2019). It was measured 0.25, 0.50 and 0.75 as small, medium and large respectively as predictive relevance of the PLS-SEM model. Therefore, the PLS-SEM predictive values (Q^2) ranged from small to medium.

Discussions

This research has two main objectives to be achieved. The first aim of the research was to explore Malaysian consumer purchasing behavior characteristics during the first phase of the MCO due to COVID-19. The second objective was to investigate the direct and indirect or mediators' relationship between crisis magnitude to purchasing behavior through shopping experience and fears (FoMO).

In the current study, the majority of Malaysian respondents were female with age ranging from 21 to 30 years.

Table 4: Assessment of the structural model

Hypotheses path Direct effects relationship		Standard beta	Standard deviation	T Statistics	p-values	95% Confidence Intervals (lower limits 2.5%; upper limits 97.5%		Hypotheses decision
H1	Mass Media -> Crisis magnitude	0.281	0.107	2.625	0.009	0.085	0.490	Supported
H2	Social Media -> Crisis magnitude	0.307	0.107	2.870	0.004	0.077	0.495	Supported
H3	Crisis magnitude -> Shopping Experience	–0.204	0.075	2.723	0.007	–0.336	–0.053	Supported
H4	Shopping Experience -> FoMO	0.186	0.059	3.151	0.002	0.069	0.294	Supported
H5	FoMO -> Purchasing behavior during COVID-19	0.445	0.055	8.126	0.000	0.328	0.546	Supported
Indirect effects relationship								
H6	Mass Media -> Crisis magnitude -> Shopping Experience	–0.057	0.036	1.589	0.112	–0.142	–0.006	Not Supported
H7	Social Media -> Crisis magnitude -> Shopping Experience	–0.063	0.031	2.022	0.043	–0.135	–0.014	Supported
H8	Mass Media -> Crisis magnitude -> Shopping Experience -> FoMO	–0.011	0.009	1.196	0.232	–0.035	–0.001	Not Supported
H9	Social Media -> Crisis magnitude -> Shopping Experience -> FoMO	–0.012	0.008	1.452	0.147	–0.034	–0.002	Not Supported
H10	Crisis magnitude -> Shopping Experience -> FoMO	–0.038	0.022	1.731	0.084	–0.090	–0.007	Not Supported
H11	Shopping Experience -> FoMO -> Purchasing behavior during COVID-19	0.083	0.031	2.657	0.008	0.027	0.145	Supported
H12	Crisis magnitude -> Shopping Experience -> FoMO -> Purchasing behavior during COVID-19	–0.017	0.011	1.541	0.124	–0.043	–0.003	Not Supported
H13	Mass Media -> Crisis magnitude -> Shopping Experience -> FoMO -> Purchasing behavior during COVID-19	–0.005	0.004	1.105	0.270	–0.017	–0.001	Not Supported
H14	Social Media -> Crisis magnitude -> Shopping Experience -> FoMO -> Purchasing behavior during COVID-19	–0.005	0.004	1.295	0.196	-0.017	–0.001	Not Supported

Malay is the largest ethnicity with more than six family members and with per annum income below RM 12,000. It clearly showed that moderated consumers are mid-aged Malaysians with lower income groups as well as less affected by COVID-19. Interestingly, the current study demonstrated two different buying patterns. First, during COVID-19 (the new trend), social media and mass media affected the severity of the crisis, but it did not significantly affect the shopping experience of Malaysian consumers. Secondly, FoMO (fear feeling) strongly impacted Malaysian consumer purchasing patterns. This finding is different compared to the research model by Hutjens (2012) in Netherland during the outbreaks of animal diseases. Hutjens (2012) showed that there is a strong link and a substantial relationship between outbreaks of animal diseases and high perceived risk, as well as consumer panic or psychology.

The results emphasize that there is indeed a strong relationship between mass media and social media

among consumers on the crisis magnitude of COVID-19 in Malaysia. Crisis magnitude and shopping experience had a negative relationship and it was significant, so we hypothesis negative relationship means crisis magnitude does not influence shopping experience. This finding is similar to previous studies, whereby crisis magnitude may evoke fear and provoke negative perceptions of shopping experiences (Larson and Shin, 2018). Social psychology has often noted that expressed attitudes do not always align with behavior (Kraus, 1995), thus, fearful consumers may report that they perceive the shopping environment as less inviting, despite simultaneously experiencing the greatest urge to regulate their emotional experience to be ready for the crisis.

The concept of FoMO is relevant and significant in the context of this study, as shopping experience has a positive relationship to FoMO and FoMO also significantly influence purchasing behavior of household essential goods during the first phase of MCO period in the battle to curb the COVID-19 pandemic in Malaysia. The origins of fear are predominately heightened by mass media and social media, and thus resulting in a chain effect of purchasing behavior.

Most of the previous studies on consumer behavior during a crisis like SARS explored the relationships between variable, but in this current study the researchers have integrated TPB and perceived risk in the form of crisis magnitude. It has extended TPB during crisis duration. The implication of this study is that fear plays the more prominent role than previously anticipated. The government needs to be aware that reports published in mass media and social media can elicit a high feeling of fear among consumers and subsequently alter their purchasing behavior.

Conclusion

This research provides a new view of mass media and social media in creating crisis magnitude, and thus influencing shopping experience of consumers. The role of FoMO should also be considered seriously in any studies on purchasing behavior during any kind of crisis situation such as a pandemic, natural disasters, economic crisis or political turmoil. Future studies can explore the role of socio-demographic of consumers and also purchasing patterns during the initial stage of MCO and the ending stage of MCO. Similar studies can also be replicated in other countries such as Indonesia, Singapore and Thailand which are neighboring countries to Malaysia. A comparison research can be conducted on the purchasing behavior of consumers from developed countries like Singapore with developing countries like Malaysia, Indonesia and Thailand.

Competing Interest Statement

All authors have read and approved the manuscript and take full responsibility for its contents. The authors have declared that no competing interest exists.

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The authors would like to thank all Malaysians who willingly participated in the survey which was done during the initial days of the first phase of the Movement Control Order in Malaysia. It was a tough phase for all of us Malaysians, and your contribution is highly appreciated. The authors also would like to confirm that this work is original and has not been published elsewhere, nor it is currently under consideration for publication elsewhere.

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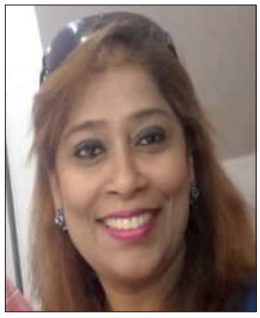

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Pennywise Rips Your Arms Off, You Still Won't Be Able to Wipe, So Keep Walking: Teaching During COVID-19 Lockdown

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ABSTRACT

The current situation of global pandemic caused by COVID-19 has created an unprecedented situation which is sending shockwaves through the world of work including teaching. The Higher Education Ministry in Malaysia was fast in responding to lockdown by immediately shifting to online teaching platforms. The aim of this study is to determine the challenges faced by teachers in one tertiary institution in Sarawak, East Malaysia, which at present, is completely excluding face-to-face communication. The qualitative data was obtained from eight university language teachers who were teaching online from home. Findings using thematic analysis revealed that teachers could overcome the challenges of online teaching with positive attitude, accessibility to telecommunication services and knowledge of online teaching, thus transforming education in Malaysia.

Keywords: COVID-19 lockdown; online teaching, challenges, positive outcomes.

Introduction

> "We are entering uncharted territory and working with countries to find hi-tech, low-tech and no-tech solutions to assure the continuity of learning.
>
> *UNESCO Director-General Audrey Azoulay (2020)*

The emergence of the Corona virus Disease (COVID-19) in 2019 previously identified as 2019 corona virus (2019-nCoVinfections in China went on to become a global pandemic and brought the world to its knees (Garger, K, 2020). Fox News (20 April 2020) also reported that there is increasing confidence that the outbreak originated in a Wuhan laboratory, in China. Since it was first detected in early December, 2019 until now, scientists have found no vaccine, thus leading to many deaths with more than 3 million people getting infected with the number increasing daily. This pandemic has caused lockdowns in at least 184 nations solely to control movement of people so as to curb the spreading of the virus.

The Malaysian Higher Education Ministry has been quick to respond to the lockdown by immediately shifting to online teaching platforms. Before COVID-19, many higher institutions in Malaysia had already implemented e-learning because of its effectiveness as a learning approach to students who were not able to physically attend college (example: Open University Malaysia, Universiti Tun Abdul Razak, and Universiti Pendidikan Sultan Idris). With the current lockdown and Movement Control Order (MCO) in Malaysia, the Higher Education Ministry has issued a directive for teachers and students to go for digital education online as an alternative learning platform. However, many teachers and students are not prepared for the mode of learning, which completely excludes face-to-face communication. The lockdown period in Malaysia began 1st April 2020 and is expected to end on 9th June, 2020. The aim of this study is to examine the challenges facing language teachers in one tertiary institution in Sarawak, East Malaysia. This will be the first such study in East Malaysia to investigate challenges of

online teaching during the COVID-19 pandemic to fill the gap in literature.

Literature Review

Definition of online education

In the research literature, online education is variously termed as "distance education" "e-learning," "online learning," "blended learning," "computer-based learning," "web-based learning," "virtual learning," "tele-education," "cyber learning," "Internet-based learning," "distributed learning," "remote learning" etc. In this study we consider all of these terms to be sufficiently synonymous and use them to refer to online teaching as it focuses on teachers teaching online.

When online education began in the late 20th century, most online programs and classes were synchronous and used chat rooms, instant messaging, and texting. Both chat rooms and instant messaging, being synchronous, allow users to decide who participates in the conversation. Technological innovations like the invention of @ symbol in 1972 for use in email (Maloney-Krichmar & Abras, 2003), and the use of the World Wide Web (WWW) for commercial purposes in 1991 for the Internet connectivity have been adapted for online education. The universal use of web sites has provided opportunities for the development of online communities and groups. Emailing, conferencing, chatting, working together via Google drive, Google doc, Google hangout, dropbox, facebook, Twitter, etc. have been widely used in online classrooms in US. (Harasim, 2000).

One perspective of this phenomenon simply sees it as the conversion from face-to-face classrooms to online, McIsaac & Gunawardena (1996) defined online education as "no more than a hodgepodge of ideas and practices taken from traditional classroom settings and imposed on learners who just happen to be separated physically from an instructor" (p.5). Fundamental to this change is the use of technology and a reorganization of the pedagogy. Moore and Kearsley (2012) stated that "distance education is teaching and planned learning in which teaching normally occurs in a different place from learning, requiring communication through technologies as well as special institutional organization" (p.2). For the aspects of being distant, Finch and Jacobs (2012) defined it as "all forms of teaching and learning where the student and instructor are separated geographically and temporally" (p.546).

Online Teaching in the World

Education in the 21st century has changed dramatically with the use of technology in the classroom. According to Bell & Fedeman, (2013), the fast development of the Internet and the World Wide Web (WWW) has produced numerous benefits to education. For instance, the nature of the anonymity in the online environment may allow more students, who otherwise do not want to attend face-to-face classes because of their shy personality, to participate in online education where they do not physically see each other. The upgraded technology and software may also allow instructors, students, and university administrators to collect data, feedback, and evaluation regarding their online experiences.

Teachers are challenged to keep up with the latest technology in teaching. Tamhane, K.D. et al (2015) stated that attitudes change when both teachers and students at the Pravara Department of Rural Engineering, Loni, Uttar Pradesh, use mobile learning application. Student can learn at his or her own pace, anywhere and anytime and this affects the working attitude of teachers who are not used to technology. Youngblood, Trede, & Di Corpo (2001) conducted a study in US to clarify the challenging role of the facilitator in the online learning environment and to identify other factors including facilitators' attitude that support or inhibit online learning. Within their study, Youngblood, Trede, & Di Corpo surveyed undergraduates in a US university, asking them to rate twelve facilitator tasks for their importance relative to the online learning experience. Findings showed that the important attribute facilitators should have brought into teaching is a positive attitude to ensure a successful online learning experience. According to Allen, I. E., & Seaman, J. (2013) study of a US high school found that teachers' negative attitude to accept technology can be a challenge. Positive attitudes toward online teaching may reinforce both teachers' confidence to bolster and make them have satisfaction. Ko, S. & Rossen, S. (2001) who examined the attitude of academicians towards teaching online courses in USA also found that most of the attitude held by academicians were negative primarily because they were uncertain of the quality of the education that students received through online courses.

One of the fears for teachers with online teaching is due to their low level of technology knowledge. Davis et. al., (1989) Technology Acceptance Model states that the task given can be accomplished with less effort if the system is user-friendly. Making the e-learning system easy for all teachers to use will encourage them to teach the content using technology. They would then cease complaining

about their low knowledge of technology. Another challenge of online teachers is to have good technical support. Teachers of online courses will be much more successful if they have ready access to highly knowledgeable faculty and staff who can guide them through the process of course design and implementation, as well as provide ongoing technical suggestions and support (Boaz et al, 2000).

When conducting online assessment, a teacher has to be aware of criteria which are different from face-to face-assessment. One challenge is to curb or control cheating. How do teachers ensure that there is no cheating when assessing their students online? Erin Gillett et al (2017), states that online assessment requires a different type of criteria as compared to traditional face-to face assessment. In the traditional classroom, teachers can use their physical presence to facilitate communication through voice, body language, intonation, expressions, and gestures in online education there is no face-to face communication and thus, their messaging can be misinterpreted by students. However, the teachers can still rely on tests submitted via email/ video via WhatsApp and to communicate via Skype, Google Meet, Zoom, Google classroom. On the other hand Tiene, D. (2000) found that in online examinations, there are advantages using multiple choice, true-false, fill-in –the-blank besides open ended questions.

Thus, teachers teaching online are challenged when making online assessments. According to a study by Purcell-Robertson & Purcell, (2000) examining the impact of online learning towards in the US education system, showed that the teachers are now the 'guide on the side' as learning and assessment have become more student centred. The way teachers assess students' work—differ from what would occur in a traditional classroom setting. Norries et al., (2011) in a study demonstrated that students' achievement in a US college increases significantly when teachers allow students to use mobile learning devices, including smartphones, during learning time. This is because their time-on-task completion will increase as they have the device at hand. They also found that students were constantly using the smartphone camera to take pictures of abstract concepts taught in class so that later they could relate them with concrete ideas.

The integrity of students is of critical importance to teachers when conducting online assessment. Mardanian, & Mozelius (2011) reported that the main problem faced by teachers when conducting online assessment is to ensure there is no cheating and total honesty of test taking measures are observed by the students. Khan, S., Khan, R.A. (2019) conducted online assessments among 41 university students in United Arab Emirates found that the students do not take the assessment seriously and regarded online assessment as easy and unnecessary. In another study conducted by Spivey, M. F., & Mcmillan, J. J. (2014) in a university in south eastern United States, data was collected through tracking technology usage and grades of 174 students. Some students were taught and assessed primarily through online learning platforms while others were assessed through traditional pen and paper tests. No significant difference was seen in terms of performance or effort in students taking online exams. The study indicates that advantages offered through online assessments are of convenience rather than academic superiority. The study lends support to the use of online assessments on the premise that they do not adversely influence student's grades.

Online resources are available and accessible to teachers to supplement their own teaching resources. Borgman, C. et.al (2008) stated that the past decade has seen enormous growth in the Internet of free, online resources available for teaching and learning. These resources, variously called learning objects, open educational resources, or online teaching resources, include innovative and interactive curricula, teacher-created lesson plans, as well as tools such as visualizations and simulations that support teaching. Erin Gillett, et al, (2017) stated that tough as it may be , teachers need to understand the challenges of converting and that very rarely is it successful to simply convert an existing course "as-is" to an online format. When teachers are at the point where they are ready to design their online course environment, the first and most important need to be met is time**.** Teachers need time to read; time to meet with instructional technology staff; time to become familiar with the technology options available at their institutions; time to experiment with the technology itself; and time to actually set up the environment of their virtual classrooms.They added that it is in the phase of course design—how a teacher plans for interactions, lectures, conversations, and assessment to occur—that the path diverges in a different direction. This is the area where teachers new to online teaching need the most guidance.

Teaching online can make time management difficult for teachers. Lin Shi, et al. (2016) found out that managing time in teaching online courses can be an enormous challenge for online instructors. They offered 6 strategies that have proven effective in the courses taught by a group of experienced online instructors at Indiana University. These are: 1) Write concisely and clearly, 2) Organize in

an easy to follow order, 3) Be explicit and emphatic about the time requirement in the syllabus, 4) Manage asynchronous discussions, 5) Take advantage of the technical tools available, and 6) Utilize other resources. By utilizing these strategies, both instructors and students can enjoy the convenience of online teaching and learning without getting lost, feeling overwhelmed, or sacrificing the instructional quality and overall learning outcome.

In overcoming the challenges so as not to cause further disruption to education in China during the COVID-19 pandemic, Huang, R.H. et al l. (March 2020) stated that a reliable network infrastructure is crucial to support cyberteaching. Therefore during the current pandemic, all major telecom service providers in China should boost internet connectivity service for online education, especially for the under-served regions in China. The Chinese authorities concerned should also increase the server bandwidth of Chinese universities and schools to provide flexible learning and teaching experience for students simultaneously without interruption. Specifically, four channels of China Education Television started open broadcasting of primary and middle school classes across the nation covering 75 lessons on air to provide learning experiences for those in remote areas in China without Internet or without cable TV.

Online Teaching in Malaysia

Online teaching is not new in Malaysia as there are an increasing number of higher institutions offering online learning programs. According to Hussin, Bunyarit & Hussein, (2009) higher education institutions in Malaysia began implementing online teaching in the late 1990s. At that time, there were execution issues such as the lack of trained lecturers, facilities and infrastructures, students' unpreparedness, and student' resistance to adopt e-learning. The main reason for online learning to occur in Malaysia is because of its effectiveness as an alternative learning approach (Masrom (2008). Online education in Malaysia continues to increase presently as according to (Azhari & Ming, 2015) the demand for online education in Malaysia continues to rise due to its capability to reach global audiences, and its unique functionality, accessibility and flexibility in the long run. According to Daniel Rahman (2020), in the 2000s, there was 1Bestari.net for schools while in 2014; the Malaysia MOOCs (Massive Open Online Courses) initiative was launched through collaboration between The Malaysian Council for e-Learning Heads (Meipta) and Open-Learning (a public-listed Australia based edtech company).

Higher institutions in Malaysia have created their own platforms for teaching online. According to Teoh Pei Ying (2020), some universities in Malaysia already have their own teaching platforms. For example, staff in UiTM use UFUTURE, while University Malaya, Kuala Lumpur (UM) academic staff are strongly encouraged to activate e-learning for teaching and learning (T&L), using SPeCTRUM (UM's in-house e-learning platform) as well as other online T&L applications. The Malaysian Education Ministry has provided other platform links for online education such as digital textbooks, PdP videos (EduwebTV/ CikgooTube) and links to applications to help PdP, such as Edpuzzle (an interactive teaching application via video), Quizizz (quiz game) and Kahoot (game-based learning platform). According to T.N. Alagesh (2020), in University Malaysia Pahang just as in all private and public institutions in Malaysia, all academic staff are supported by the university technical teams to activate the e-Learning mode through online lessons. All academic staff can get assistance whenever necessary so as to implement successfully online e-Learning methods through KALAM, UMP's Knowledge & Learning Management System, during lecture sessions using appropriate online applications.

However, there are also continuous challenges with online teaching in Malaysia. According to Karim Alias in Daniel Rahman (2020) the top three challenges of online teaching in Malaysia are (i) experience and skill of educators in using online system and online applications; (ii) the state of readiness of the infrastructure, for example, Internet connectivity, bandwidth and devices; and (iii) the evolving mindset (both of educators and students). Online teaching training is necessary to make teachers more confident and effective. Lau, C. Y., & Shaikh, J. M. (2012) reported that more training on new online learning resources should be provided to the academic staff at Curtin University Miri Campus to increase their skills in using the online learning resources for their teaching. Better internet connectivity is also necessary to boost the use of these resources.

It is crucial for teachers to have a positive attitude towards technology to ensure the success of online teaching and to improve students' performance. Haron Haryani, et al. (2011) investigated factors that influence the adoption of e-learning stated that only 13% of the respondents in a public university in Malaysia, display a positive attitude towards the adoption of e-technology in teaching and learning. Some studies conducted in Malaysia related to mobile applications and online teaching also indicated that teaching using technology had an adverse effect on students' performance. Siew F. N.

et al (2017) investigated the relationship between smartphone use and academic performance of students in a Malaysian tertiary institution as supported by the teachers. For seven consecutive days, 176 students from three academic programs recorded their daily smartphone use for learning. Significant differences were found in uses of smartphones depending on the academic program being followed. Further, it was found that the more students utilized their smartphone for university learning activities, the lower their CGPA. The outcome of this study suggests to the teachers a need to evaluate and better understand the instructional uses of smartphones for tertiary students in order to improve their performance.

In response to the current COVID-19 situation in Malaysia, Parmjit, S. (cited in Daniel Rahman, 2020) states that teachers in Malaysia must learn of the pedagogical strategies demands peculiar to online learning.These would be quite different from the strategies required in conventional delivery. Teachers have difficulties adjusting to a teaching paradigm where they cannot see students raise their hands, ask a question in class and get immediate feedback. Instead teachers have to prepare more background reading for students before each class and engage them in online discussions. Online teaching strategy does not require a different timetable as classes are generally conducted in line with published timetables to ensure that a sense of "normalcy" continues to exist.

The Malaysian Ministry of Education Ministry has provided platforms accessible through www.moe-dl.edu.my. Thus, teachers can utilize the best platform to teach online. During the current COVID-19 pandemic, Parmjit, S. (cited in Daniel Rahman 2020) said a recent survey found that Malaysian higher institutions have been well prepared for this shift to e-learning, where both teachers and students have been overwhelmingly receptive. Among the industry-leading tools and technologies used by educators, he said, were Microsoft Teams, Moodle, WhatsApp, Blackboard, Open Learning Platform, WizIQ, Zoom, Facebook Livestream, Google Classrooms, Google Suites and Google Meet.

An important aspect which also concerns teachers particularly during the lockdown of COVID-19 pandemic is how to conduct assessments during the COVID-19 pandemic. According to Tharanya Arumugam (2020), during the current COVID-19 pandemic, the Higher Education Ministry and Malaysian Qualifications Agency (MQA), have approved alternative assessments which are comparable to, if not more stringent, than traditional examination methods. Each alternative assessment approach must be designed to ensure that students achieve the learning outcomes for the subject and course. This has to go through a review and quality assurance procedures and ultimately be approved by the university's Senate. Thus, proper alignment with programme learning outcomes is extremely important. Besides, any alternative method has to be in full compliance with the directives and guidelines issued by MQA. Final exam could be substituted by final assignments, projects, and papers.

Telecommunication services in Sarawak

The challenge facing teachers during COVID-19 period in rural Sarawak is telecommunication services. The past five years have seen an increasing awareness in Sarawak on the usage of Internet as an alternate means of communication. Through the two major Internet Service Providers (ISP's) in the country, TMNet and Jaring, most Sarawakians in and around the major towns and cities are going on-line. The recent introduction of broadband Internet access has seen an even sharper increase in the number of Internet users in the state. Sarawak hopes to connect some of the remotest areas through various projects (both government and non-government bodies). Its e-Bario project was introduced by University Malaysia Sarawak (UNIMAS) in July 2000 (Sarawak Government Official Portal, 2020).

Methodology

Location of study

Located immediately north of the Equator between latitude 0° 50° and 5°N and longitude 109° 36' and 115° 40' E, Sarawak stretches some 800km along the north-west coast of the island of Borneo. Sarawak is separated from Peninsular Malaysia by a distance of 600 km by the South China Sea. On the island of Borneo, it directly adjoins the State of Sabah to the north-east where the Sultanate of Brunei forms a double enclave.

Today, there are 2 public universities, 3 private universities, 3 teacher training institutes, 3 polytechnics, 4 healthcare colleges in Sarawak with an increasing number of private colleges with staff and students from all over the world and they utilise internet in their teaching and learning. This study was conducted at a public university in Sarawak which has also moved to online learning mode whereby all academic activities conducted are a blend of asynchronous (without real-time interaction) and synchronous (real-time interaction) online learning.

Figure 1: Map of Malaysia

Synchronous sessions are held in moderation considering students' limitations, especially those with poor Internet speeds. They are conducted according to students' timetables to avoid overlapping online classes. Students with good Internet connections can join the scheduled sessions. Students can also participate in self-paced asynchronous learning activities on the university's online learning platform (UFUTURE).

Data Collection Procedures

The interview questions for the study were designed based on common issues discussed among language teachers at a public university in Sarawak due to traditional classroom teaching being replaced with online classroom teaching during the COVID-19 pandemic. Through video call discussion with the language teachers, questions were formulated based on a) Attitude towards teaching online, b) Accessibility of telecommunication service, c) Knowledge of technology, d) Online teaching strategies, e) Online teaching time management, f) Online teaching platforms, g) Online teaching resources, and h) Online assessment. The questions were also designed to capture any new experience not addressed in the literature with regard to online teaching during a pandemic.

One of the researchers who was an insider, obtained prior permission from the head of the language department of the university concerned before contacting 8 language teachers to share their experience. The interview questions were posted to them in the middle of April 2020 via e-mail and all responded immediately. In the analysis below, all the respondents are referred to as Respondents 1-8.

Interview Questions

1) How do you feel about teaching online?
2) How good is the telecommunications service for you to teach online?
3) What are the technical skills which a teacher needs when teaching online?
4) What strategies do you use when teaching online?
5) How do you manage your time when teaching online?
6) Which online teaching platforms do you use?
7) How do you conduct online assessment?
8) What online teaching resources are available for you?

Data Analysis Procedures

This study utilised thematic analysis to find out the teachers' experience from their written responses. Thematic

Table 1: Profile of Respondents

Respondent	Gender	Teaching experience	Knowledge of Technology
1	Female	15 years	Basic
2	Male	16	Basic
3	Female	5	High
4	Female	18	Basic
5	Male	8	High
6	Male	20	Basic
7	Male	27	Low
8	Female	33	Low

coding is a form of qualitative analysis which involves recording or identifying passages of text or images that are linked by a common theme or idea allowing you to index the text into categories and therefore establish a "framework of thematic ideas about it" (Gibbs 2007). As such a qualitative analysis was made from the language teachers' responses which were interpreted to illustrate in what way similar experiences were shared and relevant.

The coding strategy has been to search for common experiences corresponding to the questions in the interview. An inductive approach was used allowing the data to determine the themes. The data which consisted of common responses were then reviewed for connections and similarities. A theme was plotted out based on the codes identified in each of the responses. When doing this, frequent key words and phrasings in excerpts were highlighted to formulate the themes for the findings.

Results

Theme 1: Teachers must have positive attitude towards online teaching.

There were mixed attitudes among the respondents about teaching online during the COVID-19 period. From the data analysed, the reasons were coded as familiarity and uncertainty. Respondent 1 said "I'm not sure how much is expected from me or the students when teaching online as everything is so uncertain. Do I have a choice?"

The respondents also felt as though they were given no alternative but forced to teach online and it made them uncomfortable but they remained positive. Respondent 2 said "I don't like to be forced to teach online, but it is alright now", whereas Respondent 3 was willing to "just follow what I was told and learned what I need to know to teach online. So, I should be positive." Respondent 4 felt the shift to online teaching "is sudden and I'm still adjusting, but after a few weeks, it does make me feel less uneasy now." Respondents 6 stated that 'online teaching bothers me, it does take time to make it possible". With time, Respondent 7 described that teaching online as "fine now but initially it turned my life upside down." Even though Respondent 8 has a few more years before retirement, she too remained positive because "I get help from the younger lecturers each time I called them. So no problem. I just keep to basics." On the other hand, Respondent 5 was very positive about teaching online as he has "conducted such classes before. It saves time and even money for the students because they can stay at home."

Generally, there were mixed feelings about teaching online. Some adapted more quickly than others and for most the early awkwardness receded when they grew more comfortable with the technology. The analysis shows that the senior teachers have fears about teaching online but overcame them after attending webinars organized by the university and assistance from fellow colleagues. This corresponds with Allen, I. E., & Seaman, J. (2013) who stated that the attitude the teachers in a high school in United States is influenced by the user's perception on ease of use of technology, so it is of importance to understand users' confidence.

Theme 2: Students must have accessibility to telecommunication services for online teaching to be possible

The common words and phrases used by the respondents to describe telecommunication service are: 'no problem, line is good' to describe the teacher accessibility to the Internet, and 'poor connection, unclear, not stable' to describe the internet connection in the rural areas in Sarawak where some students were staying at the time this study was conducted. The data obtained was coded as good Internet connection for teachers and poor internet connection for rural students.

Respondent 1 who lived in the city mentioned that he utilised a lot of data, the connection was good and the other colleagues who were also staying in the city did not experience any problem with the internet connection "accessible as long as I pay the bill but some of our students staying in city area have rather poor internet connection because their parents cannot afford to pay the bills." This shows that accessibility to telecommunication service was not available for some students living in the urban areas, too. Even Respondent 2 who stayed in the city without facing any problem teaching online responded by saying "A few of my students staying less than 5 miles away from me have poor connection. What more to say those staying in Baram and Belaga (rural areas)?" Respondent 7 was unable to teach his rural students who lived in the long houses due to poor connection as "the internet line is not stable in the area. Some of these rural students are staying in the *rumah panjai* (longhouse). I don't expect any internet connection in the long houses." However, Respondents 3 and 4, who also lived in the city without any problem teaching online, did their best to assist by "guiding my students using WhatsApp" while Respondent 4 tried "many ways including making phone calls to assist them."

In China, during the COVID-19 pandemic period, Huang, R.H. et al. (2020) stated that a reliable network infrastructure was crucial to support cyberteaching, especially for the under-served regions in China. The Higher Education Ministry in Malaysia too, was aware of the telecommunication problems in the rural areas and has requested teachers find the best platforms to teach online. Parmjit, S. cited in Daniel Rahman, (2020) stated that the higher institutions in Malaysia were well prepared for this shift to e-learning and students were receptive to various ways used by their teachers.

Teachers at the university where this study was conducted informed students to be in locations where they could have access to the internet to reduce online teaching disruptions. Respondent 8 "manage to reach all my students, even in Bekenu *alhamduillah*. I asked them to stay with relatives with good internet connection. These are the lucky ones with supportive relatives." All the respondents said that in order to overcome the internet problem for students who were staying in the long houses during the pandemic period, they posted learning materials in boxes using express boats to deliver these boxes to their rural students.

Theme 3: Teachers must have knowledge of technology for online teaching.

From the responses given by the respondents regarding technical knowledge necessary for online teaching, two codes were formulated from the data: Basic knowledge of computer skills; technical assistance for teachers. All the respondents agreed that online teaching required them to have basic technical skills. In fact many of the respondents have the basic technical knowledge as Respondent 3 assured "I'm rather good at computers. My technical skills are excellent, too. I can fix the problems easily. I help others too." It was echoed by Respondent 5 who has "no problem teaching online. I just need basic knowledge of computers and internet with some applications." The positive attitude of the teachers to enhance themselves by getting assistance from colleagues was a remarkable effort as shown by Respondent 2 who "just asks colleagues to help upload notes online in Google Classroom." Fears of handling technology were overcome by Respondent 6 who "freaked out each time something pops out, luckily, the computer science lecturer is a reliable colleague."

Older respondents such as Respondent 8 were assisted by the younger colleagues who "taught me all the online teaching skills. I'm scared as these things are very fast for me and I'm quite slow technically." Besides that, the university technical team was available to assist the teachers as shown by Respondent 7 who said "Thanks to the university technical online teaching team. I m well guided by them and so far I've become quite an expert myself until I can help others, too" added Respondent 4 who also said that **"**The university provides webinars for teachers to learn how to teach online. So far, I can cope well."

The language teachers at the university tried their best to equip themselves with technical skills to teach online during the COVID-19 period. Boaz, Elliott, et al. (2000) noted that teachers of online courses will be much more successful if they have ready access to highly knowledgeable faculty and staff who can guide them through the process of course design and implementation, as well as provide ongoing technical suggestions and support.

Theme 4: Teachers should use successful online teaching strategies.

All the respondents provided a variety of teaching strategies coded as: engaging with students; synchronous and asynchronous teaching. Respondent 1 said "My most successful online teaching strategy is engaging with my learners online.

Since the students were either at home or remained on campus when this study was conducted, the teachers made sure that all the students were able to attend the online classes according to the timetable given. Respondent 2 said that "It is stressful for the teachers when they are unable to have face-to-face communication with the students." Respondent 3 guided "my students by using WhatsApp." Respondent 4 also claimed that he tried "many ways including making phone calls to assist them." As Parmjit, S. (cited in Daniel Rahman 2020) mentioned, teachers have difficulties adjusting to a teaching paradigm where they could not see students raised their hands, asking a question in class and getting immediate feedback.

The teachers in this study prepared more background reading for students before each class and engaged them in discussions. They also engaged students by getting them involved in a variety of activities. Respondent 7 "made sure all my students are engaged and not left out. So, I make use of group activities, pair work activities." Such activities enabled the teachers to ensure that all the students;' voices could be heard as the teachers were not able to attend to the students individually. Thus, by engaging students using the pedagogical strategies

demands of online learning, teachers no longer have to think of just the conventional delivery (Parmjit, S. cited in Daniel Rahman , 2020).

The respondents applied various online teaching strategies and Respondent 2 agreed that "the online teaching seminars are very good, because now I can use a combination of both synchronous and asynchronous activities." Since chartroom was popular among students, the respondents were happy to use chatting as a strategy to conduct discussions in the chat groups. Such synchronous online teaching and learning kept the teachers in touch with their students as mentioned by Respondent 5 that it was possible to "ask my students questions and they too can ask me questions instantly in the chat group." The teachers also made use of asynchronous teaching method requiring the students to submit their portfolios and assignment by e-mail. Respondent 6 also "instructed my students to submit all their assignments to my Dropbox."

Like other respondents, Respondent 3 "make sure that I give continuous feedback. The feedback is constructive feedback so that students can clearly identify their errors and improve." The respondents agreed that it was hard to give immediate feedback when teaching online especially when there was no face-to-face communication. However, effort was made by the respondents to ensure that students remained engaged by giving continuous feedback for assignments submitted.

Theme 5: Teachers should be able to manage their online teaching time.

Generally, it was an enormous challenge for the teachers who were less familiar with online teaching methods to manage teaching time wisely. After a few weeks of teaching online, all the respondents said that they were able to manage their time. The teachers were aware that giving immediate feedback was good in remote learning but it could cause interruptions to their lessons. In order to save time Respondent 1 would "ask students questions directly to gauge my students' understanding." This is consistent with Lin Shi, et al Magjuka (2016) who found that to manage time itself and giving feedback when teaching online courses could be an enormous challenge for teachers.

The respondents found ways to manage teaching time for their lesson and activities to be conducted effectively. Among the strategies used by Respondent 2 to manage teaching time was to "control the students turn-taking in discussion. I also put a chunk of materials into weekly modules, mark the start and end dates for each module." Time management became more effective after the respondents learned how to save time by avoiding repetitions for announcements, messages and even the content of their lessons. Respondent 3 could "save a lot of time when I don't have to repeat the content especially when students join the online classes late." So, the respondents adhered to the existing timetable strictly to avoid delays in teaching time. As for Respondent 4 "explaining a difficult task properly before assigning it to students in Google Classroom saves a lot of time and headaches." Such delays bothered the respondents as experienced by Respondent 6 whose "students do not always check the course website all the time". In order to avoid interruptions, the respondents sent the tasks assigned to students using multiple platforms.

Since, the respondents in this study were required to follow the online class timetable prepared by the university, interruption was easily avoided. However, all of them discovered that working overtime and during weekends became a new routine. This was because some students with poor internet connection were not always able to join classes according to the new timetable, so the teachers were expected to arrange alternative times to suit the students' situation. Respondents 4 contacted students using instant messaging, chat rooms and "the frequency of interaction with my class during office hours, class time and messaging me anytime." The teachers gave such flexibility of time when guiding students, and reviewing their tasks. To save time and to ensure that students were able to understand the lessons, the teachers ensured that the delivery was clear with a concise content. For Respondent 8, it was "important to make my content clear and concise in Google classroom to save time. I also make sure I don't over-emphasize the content."

Theme 6: Teachers should utilize multiple online teaching platforms.

The respondents were aware that the Malaysian Higher Education Ministry has provided guidelines detailing the roles and responsibilities for teachers, to ensure the smooth delivery of teaching and learning throughout the Movement Control Order (MCO) period. All the respondents have been informed about teaching platforms guidelines and access to communications technology. All the respondents in this study used a variety of online teaching platforms and social media applications during the COVID-19 pandemic period.

The respondents used a variety of online platforms for delivering lessons, instructions and assignments to

students. Respondent 1 used "Google classroom to plan and give instructions, assignments and Google Meet to see their faces." The respondents were also aware that not all students could have access to certain platforms as noticed by Respondent 2 who used "a variety of online platforms because some students cannot get access to certain platforms."

When choosing online platforms, WhatsApp video call was most preferred as the charges were affordable for students as compared to other systems. However, Respondent 7 "used all the recommended platforms such as Google Meet and Google Classroom. Some of my poor students need to spend money buying internet data packages. So, I also use WhatsApp which is cheaper." The rural students with internet connection problems found it easier to communicate with their teachers using WhatsApp and Respondent 3 wanted "students to refer to materials which I WhatsApp them." All the respondents agreed that it was easier to connect with students using social media as reported by Respondent 8 that "many of us have utilised social media platforms such as Instagram and instant messaging apps such as WhatsApp and Telegram as teaching platforms because it is easier to connect with our students using these platforms."

Convenience of using a certain online platform also made online teaching easier for the respondents. Smartphones, tablets, laptops were used to gain access to common platforms such as Google Classroom and Google Meet. Respondent 4 noted that "students' participation is better when they suggested that I utilize mobile learning devices, including smartphones, during teaching and time. Since the students always carry smartphones around, they are always alert."

Multiple applications were used, also because the teachers wanted to make teaching more interesting as stated by Respondent 5 who said "mobile applications are more convenient just as Google Classroom is convenient. I can suggest reading e-books for their reading before the next class. WhatsApp mobile applications are also good for quick communication, taking pictures of diagrams and concepts taught using smartphones in Google Meet."

Theme 7: Teachers should utilise alternative online assessment.

All the respondents felt the greatest challenge when teaching online was conducting online assessment. Since, the lockdown in Malaysia (1st April,2020 until 9th June, 2020) due to the COVID-19 pandemic, social distancing and lack of non-verbal communication made assessments only possible through online platforms such as video call, Skype and Google Meet. Respondent 2 conducted "assessments using the standard exam rubrics. That means I'm not compromising with standards even when assessing using Skype." Thus, the teachers have to think of the best platforms when conducting both written and oral assessments for the students. However, it became obvious to the respondents that with alternative assessments, the student work was assessed—differed from what would occur in a traditional classroom.

The respondents were aware that each alternative assessment approach must ensure that students achieved the learning outcomes. Respondent 4 taught "Reading Compression and posted the standard test online in the Google Classroom". The other common assessment used by the teachers included multiple choice items in WhatsApp as used by Respondent 5 "I make use of true-false, fill-in-the-blank and open-ended questions to get their understanding of the topic. The same respondent insisted that "students do their assessment and return in, E mail/Dropbox for submission of assignments." The respondents were aware online assessments were not as good as compared to face-to-face assessment. Respondent 3 stated that "assessing online written exams is difficult as the students might not be honest. It is not a good form of assessment."

Students cheating in online quizzes and other tests were a concern as stated by Respondent 7 who was "worried that the students are not honest." So, the students were given immediate feedback and different types of assessment to reduce the possibility of cheating. Respondent 8 considered "multiple choices, true and false statements are good as I can give them feedback immediately. I use Google Meet to assess the group discussions." However, giving feedback immediately after assessment also took much longer preparation time and this stressed out the teachers as claimed by Respondent 6 whose students "always ask for feedback immediately, taking more time and it is tiring."

Theme 8: Teachers should utilise a variety of online resources.

Generally, the respondents commented on their students' ability to understand better when taught using many available online resources. Interactive online teaching and learning resources helped the teachers to select the materials suitable for the topics taught. Respondent 6 made "sure materials are interesting and useful for the

students. So, I use the resources with interactive activities to provide self-paced instruction."

Since the class consisted of students with different abilities, the recorded online resources were better understood as they could be replayed. The teachers used online materials directed at the students, so the content could also be covered quickly and enabled the students to work in a self-paced manner. Respondent 8 consisted of "different-ability students, so I use the materials differently. I could also use the recorded materials in a self-paced manner."

Teachers with low and basic computer technology knowledge could get online resources from webinars, websites, resource persons but the internet connection must be good. Respondent 5 attended "all the webinars and online training on sourcing for new online learning resources. However, a good internet connection is also necessary to boost the use of these resources." The resource person was considered as an important person providing teaching materials for the teachers as claimed by Respondent 1 who could "get teaching resources easily from the webinars series and websites sent by the resource person. I just need to contact the resource person for additional resources." The teachers especially those with high knowledge in technology also shared their online materials with other colleagues as Respondent 2 shared "past years' papers and course materials. I also shared materials and videos from YouTube with my colleagues." Searching for materials from other sources including other university websites were also useful to make online teaching more effective. Respondent 3 added that "there are downloadable worksheets related to my topics available in the Internet. Some colleagues also sent useful materials to my Dropbox. I can also get links and resources from other institutions teaching the same topics."

The respondents were also selective when downloading videos to boost students' interest in certain topics as mentioned by Respondent 7 who noted "students' ability to learn better when using online learning resources, especially visualizations." The respondents believed that awareness enabled teachers to look for more online materials using the websites provided by the university. The more resourceful teachers also designed activities using online resources and made sure different ability students could understand materials delivered online. Respondent 4 commented that "creating more awareness among teachers on how to look for teaching resources online solves a lot of problems because online learning resources recommended by the university also include many e-learning modules."

Conclusion

According to Asabere (2012), online learning aims to seek changes in the pattern of the entire academic process. Such changes have been observed during the COVID-19 pandemic period in Malaysia as teachers have been informed by the Higher Education Minister of the need for transformation from face-to-face interaction to online teaching. Based on the findings, remote/ online learning, teachers in Sarawak too have the potential to exploit interactive technologies and communication systems to improve the teaching experience. Online teaching has the potential to transform the way teachers teach and students learn across the board. It can raise standards, and widen participation in lifelong learning. It cannot replace teachers, but alongside existing methods it can enhance the quality of teaching.

The findings of this study also revealed that teachers have mixed attitudes towards teaching online at home when they have low knowledge of technology, thus causing uncertainty. Guidance from the management and technical teams can prepare teachers better when teaching online. This is especially necessary for teachers who are unprepared to teach online but have no other alternative. Findings from the study also showed that initially, those with low technology knowledge felt uncomfortable at being forced to teach online. However, with the support from younger colleagues with better knowledge of technology and with training provided by the university technical team, the attitude of the teachers changed gradually to less negative. So, after COVID-19 is over, teachers will have a new normal of teaching and take the challenges positively. Just as the respondents in the study did, all teachers should acknowledge and agree that online teaching is transforming a teacher's role in the classroom for the better.

The respondents in the study have accessibility to telecommunication service for online teaching because they lived in urban areas. On the other hand, online teaching was not possible for teachers to teach students during the pandemic period who were without internet connection or meagre internet facilities, especially in rural areas in Sarawak. According to Sarawak Government Official Portal (2020), the past five years have seen an increasing awareness in Sarawak on the usage of the Internet as an alternate means of communication. Through the two major Internet Service Providers (ISP's) in the country, TMNet and Jaring, most Sarawakians in and around the major towns and cities are going on-line. However, findings from the study showed that during the COVID-19 pandemic, rural students were still unreachable due to

poor connection, thus making online teaching only possible for urban students. To avoid disruption to their studies, the university management has asked the rural students to return to the university hostels.

The findings of this study also found that teachers could easily connect with students using various types of online learning platforms and mobile applications as long as there was good telecommunication service in their areas. Respondent 8 described the situation – "My student, Aniq, from a resourceful family is able to access the internet and learn from the comfort of an air-conditioned room in Kuching city, but the same cannot be said for, Rina, a student in an *Orang Ulu* (rural) settlement or Jamil who lives in a low-cost flat". Thus, the findings revealed that online learning requires the right infrastructure and support. Without these, online learning cannot be accessible to every student.

As far as time management when teaching online is concerned, the findings showed that teachers have to be flexible, provide immediate response, control delivery time, avoid repetitions, have proper planning, and present content which is clear and concise. When doing these, the respondents in the study ensured their students understood the content and were able to complete the task given with minimal guidance by utilizing alternative standardized online assessments. The findings also revealed that teachers are concerned about students cheating when taking online assessment and therefore they should use multiple forms of assessments.

The findings of this study are descriptive based on a small number of respondents limited to one institution. In terms of practical implications the findings support the view that teachers need explicit technical and online resources support in order to enhance their online pedagogical capacity. Also, to optimise online teaching requires the right attitude, infrastructure, resources and support. Without these, online teaching highlights the inherent inequalities in education. Teachers and students who have the resources and capital can use online platforms to teach and learn, but those who do have such resources are further disadvantaged. In the interior areas of Sarawak where internet connectivity is poor, more innovation is required to ensure that online teaching works for them too.

Competing Interest Statement

The authors have declared that no competing interest exists.

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ORIGINAL ARTICLE

Role of Information System Management during Emergencies: The COVID-19 Crisis in Malaysia

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ABSTRACT

The spike in the number of COVID-19 cases across the globe hased the World Health Organization to declare the virus as a pandemic. Many countries have institutionalized either complete or partial lockdowns in coping with COVID-19. Regardless of a partial of full-lockdown, most organizations, across different sectors, are focussing on business continuity through work from home and other initiatives—which require access to information systems remotely, coupled with other forms of short-term crisis management measures. Managing emergency situations forces organizations to rethink strategies, competencies, and processes to enhance resilience. The COVID-19 pandemic suggests that Information Systems play a vital role in crisis management efforts for majority of organisations. Nevertheless, these remedial measures may not necessarily be guided by well-defined emergency management frameworks and the role that information systems can play at the core of such efforts. At the organisational level, the developments in information communication systems as well as workforce technology have transformed the magnitudes of work culture to an unprecedented level. It has led to a diverse work atmosphere. The workforce consumes a 24/7 situation to provide stake holders around the world with necessary services. Many innovative practices have been adopted by companies around the world. The challenges of amalgamating work and family life is an evident fact due to technological advancement which enables remote working. In some companies abroad a well-balanced career and social obligations are enforced as part of the human resource initiatives to maintain a healthy and committed work force. This study aims to bridge the gap in the body of literature pertaining to the information system quality impact on emergency crisis management during the COVID-19 crisis in Malaysia.

Keywords: information systems; communication systems; emergency management process; crisis management; pandemic; COVID-19; Malaysia.

Introduction

Advanced computing technologies have led to new forms of working concepts such as telecommuting. The advent of mobile computing and increasing access to the Internet and its component technologies have also paved the way for working from a remote location instead of a traditional office environment, particularly during major crisis situations such as the COVID-19 pandemic. The COVID-19 pandemic has revealed to us that, the use of digital technology—or more broadly speaking, the use of Information Systems in an institutionalised context, offers temporal solutions to many organizations in remaining resilient during this crisis. Most have turned towards technology and digital applications to ensure business continuity. From zoom meetings, google hangouts/meet,

skype to more simplified applications such as WhatsApp and YouTube, companies are trying their level best to ensure core operations run effectively. The COVID-19 pandemic has taught Malaysian corporations several key lessons. Firstly, the advancements in technology have made communication from a remote location possible., Thus, this leads to the ability to work from anywhere at any time with the aid of various tools and technical support systems—more so during a pandemic/other forms of emergencies. Secondly, the information system management may have a role to play in the emergency work processes, given the availability of modern technology. To ensure successful management of emergencies, it is vital for organisations to ensure that issues such as information system's quality and its amalgamation into core work processes are done properly.

As such, this study intends to examine the relationship between information system management and emergency work process management which posit to indirectly contribute to improved crisis management. Our proposed model is tested in a Malaysian context, based on data gathered during the first two phases of the movement control order (MCO—March 18th to April 14th, 2020).

Literature Review

Researchers in the Information Systems (IS) fields have suggested various models to describe what makes some IS as 'successful.' However, based on Davis's (1989) Technology Acceptance Model (TAM), it was derived from Ajzen and Fishbein's (1977) Theory of Reasoned Action and Theory of Planned Behaviour (Ajzen, 1985) to understand why some IS are readily accepted by users compared to others (Davis, Bagozzi, & Warshaw, 1989). However, acceptance is not equivalent to success, although the acceptance of an information system is a necessary prerequisite to determine its success. In addition to TAM, TAM 2 (Venkatesh & Davis, 2000) and the Unified Theory of Acceptance and Use of Technology (UTAUT) were developed (Venkatesh, Morris, Davis, & Davis, 2003). Information Systems Success theory explored in this study is mainly based on the DeLone and McLean's IS Success model. Its basis is in the mathematical model of communication derived in 1949 by Shannon and Weaver, whereby Norbert Wiener's theory of probability was the underlying theory used to produce their communication theory (Shannon & Weaver, 1949). Shannon and Weaver used tools in probability theory, developed by Wiener, which were applied to communication theory. Shannon and Weaver developed information entropy as a measure for the ambiguity in a message while basically creating what was identified as the main form of "information theory." Then the Shannon–Weaver model was comprehensively adopted into science researches in various fields such as education, management, information systems, organizational study, psychology, and several other areas. However, some reviewers have categorized this adoption as misleading and lacking representation in human's communications, citing its simplicity and inability to consider the context (Chandler, 1994). Shannon and Weaver's theory was used extensively in various fields of engineering and mathematical studies (Verdu, 2000). However, Mason (1978) improvised this model to meet the needs of information technology. The author presented a conceptual framework, with relevant examples to gauge the output of an information system. Mason drew on communication theory where four approaches to output measurement were developed. The measures were based on technical level output, semantic level output, functional output and pragmatic level output (Mason, 1978). Based on the sound foundation from Shannon and Weaver and Mason (1978) as well as empirical research analyzed from 1980–1987, DeLone and McLean (1992) and its updated version of their 2003 paper postulated a complete multidimensional model (hereinafter referred to as the D & M Model) to measure IS success. The technical level of communication was defined as accuracy and efficiency of the communication system to produce information (Shannon & Weaver, 1949). The semantic level and effectiveness level were determined as the success in delivering the message to the intended receiver and the impact of the message on the receiver respectively. However, the D & M model uses systems quality to measure technical success, information quality to measure semantic success and use, and user satisfaction, individual and organizational impacts to measure effectiveness success.

Information System during Emergency Crisis Management

Information Systems (IS) is the study of complimentary networks of hardware and software that people and organizations use to collect, filter, process, create and distribute data (Jessup & Valacich, 2009). In this study, IS refers to the application and devices used by employees from a remote location. Information quality can be divided into inherent and pragmatic information quality (Johnson & Johnson, 2009). Inherent information quality refers to the correctness of the data whilst pragmatic information quality refers to the value of the accurate data in supporting daily operations of the company

(Johnson & Johnson, 2009). Quality as defined by Philip Crosby (1979) is the "conformance to the requirement". In this study, information requirements by the users / employees under the construct of information quality, is tested to meet the functional requirements to perform their work. Software Quality is defined as the conformance to explicitly state functional and performance requirements, explicitly documented development standards and implicit characteristics that are expected by all professionally developed software (Johnson & Johnson, 2009). Quality in an organization is deemed as excellence and conformity to specifications and meeting customer's expectations (Reeves & Bednar, 1994). Information Systems (IS) can be best understood using the framework of quality designed by Reeves and Bednar (1994) as the usage of state of the art technology together with "best practice" software and hardware standards to deliver an effective customer oriented service and performance (Reeves & Bednar, 1994). The significance of IS can be comprehended by improving profit limitations for the organization to provide a user-friendly and valuable applications. IS quality is known as a conformance to certain requirements to design systems that match the end users' information needs and adhere to business standards (Reeves & Bednar, 1994; Gorla, Somers, & Wong, 2010). Offering an appealing, user friendly service or product and entertaining user needs for changes and satisfying them of their expectations towards IS quality in turn allows them to be at ease to perform work efficiently (Gorla, Somers, & Wong, 2010). Amplified dependence of employees on IS drives management's interest to improve information systems' quality (ISQ). A recent study by Gorla et al (2010) demonstrated that ''Improve IT quality" is one of the top issues facing ICT employees. While ISQ is a multidimensional measure, it is imperative to establish what phases of IT quality are significant to organizations to help the higher management authorities to devise efficient IS quality enhancement strategies (Gorla, Somers, & Wong, 2010). In their research, Gorla et al (2010) modelled the association between ISQ and organizational impact. They found that better organizational impact was contributed by higher system quality, information quality and service quality. They also found a positive relationship between system quality and information quality. A survey was used to collect the data in this study. A Structural Equation Model (SEM) exhibited a good fit with the experimental data. Hence, the results of their study portrayed that IS service quality is the most influential variable in this model which was followed by information quality and system quality, respectively, consequently high-lighting the importance of IS service quality for organizational performance (Gorla, Somers, & Wong, 2010). As such, there may be a contribution of these constructs towards the work-life balance of an employee, whereby a sound and well-defined information system and processes may ease an employee's strain and stress towards performing work from a remote location during an emergency crisis.

Hypotheses Development

Information System Quality during Emergency Crisis Management

For this study, information system quality (ISQ) is divided to three sub constructs i.e. information quality, system quality and service quality. Various researchers looked at work life balance and emergency work processes during crisis management in its organizational behavioural context as opposed to an information technology (IT) perspective. Thus, the need to examine the relationship between information system quality (ISQ) on emergency work processes and crisis management amongst remote workers in Malaysia during the COVID-19 pandemic movement control order. As such the following hypotheses were tested:

Hypothesis 1 (H1): *There is a significant positive relationship between Information Quality and Emergency Management Process.*

Hypothesis 2 (H2): *There is a significant positive relationship between System Quality and Emergency Management Process.*

Hypothesis 3 (H3): *There is a significant positive relationship between Service Quality and Emergency Management Process.*

According to Stephens, K.K (2020) the relationship between job, location of work and the gadgets used to work is a vital part of the job itself. Neha and Pooja (2012) illustrate that the ways to capitalize on employee productivity centers around two main areas, namely the infrastructure of the worksite and individual motivation to utilize the infrastructure. Various literatures define different issues that control the performance of employees. Hayes (2009) elucidates the behavioural office setting and components of the workplace environment have the most impact on staff productivity. The mediating hypotheses between ISQ and Crisis Management are derived to test this relationship.

Hypothesis 6 (H6): *Emergency Management Processes mediates the relationship between Information Quality and Crisis Management during COVID-19.*

Hypothesis 7 (H7): *Emergency Management Processes mediates the relationship between System Quality and Crisis Management during COVID-19.*

Hypothesis 8 (H8): *Emergency Management Processes mediates the relationship between Service Quality and Crisis Management during COVID-19.*

Communication during Emergency Crisis Management

Communication is an essential mode to disseminate information among employees in an organization during a movement control order and when employees are required to work from a remote location. Employees and employers can be well informed of the happenings and work progress with a sound communication layout in place during emergency crisis situations. (McManus et al., 2008). Furthermore, communication provides employees with the sense of responsibility to keep their colleagues and superiors informed of the task progress in hand. Consecutively, a well-structured communication plan leads to enhancing confidence. Thus, preparing employees with collective mind-set to face a crisis (Connor & Davidson, 2003). An organization is deemed to be able to communicate effectively and accurately during adverse situations (Wangnild, 2009). The organization that has a strong communication system enriches the employee's understanding of normal and crisis times, making it more resilient compared to the rest. Therefore, this doubt leads to the testing of the following hypothesis:

Hypothesis 4 (H4): *There is a significant positive relationship between Communication System and Emergency Management Process.*

Hypothesis 9 (H9): *Emergency Management Processes mediates the relationship between Communication System and Crisis Management during COVID-19.*

Emergency Management Process during COVID-19

Emergency management systems are used by organizations to assist in responding to a crisis situation. These systems support communications, data gathering and analysis, and decision-making. Emergency response systems are rarely used but when needed, they must function well and without fail. Designing and building these systems require designers to anticipate what will be needed, what resources will be available, and how conditions will differ from normal. A standard model for an Emergency management systems (EMS) is from Bellardo, Karwan, and Wallace (1984) and identifies the components as including a database, data analysis capability, normative models, and an interface.

This model is only somewhat useful as it fails to address issues such as how the Crisis Response System fits into the overall crisis response plan, EMS infrastructure, multiple organization spanning, knowledge from past emergencies, and integrating multiple systems. Additionally, many organizations do not address the need for an EMS until a crisis happens, and then, only for a few months until something more pressing comes up (Jennex, 2003). The result is that many organizations have an EMS that may not be adequate. Prior to the establishment of the Homeland Security Department, the task of managing information pertaining to crisis situations and crisis management in the United States was under the jurisdiction of the Office of Emergency response (OEP) (Turoff, 1972).

The information requirements for the OEP were largely handled by a group of consultants from both business and academia. Over time, the OEP recognized that a system that could provide timely and relevant information to crisis responders was needed (Turoff, 1972). In 1970, twenty-five people working on crisis response were able to collaborate via a computerized Delphi system (Turoff, 1972). Computerized Delphi techniques can be administered via the web today (see for example Turoff and Hiltz, 1995). In 1971, the OEP was assigned the task of monitoring a new form of crisis called the "Wage Price Freeze" (Turoff et al., 2004). This new role for the OEP included among others, to "monitor nationwide compliance, examine and determine requests for exemptions and prosecute violations" in relation to wage and price changes in the economy. This led to the advent of a flexible system called the Emergency Management Information System and Reference Index (EMISARI). EMISARI was a system designed to facilitate effective communication between people involved in monitoring the Wage Price Freeze situation.

The system was designed to integrate people and data into a common platform that could be updated regularly by people who were non-technical administrators (Turoff et al., 2004). The EMISARI system was flexible and enabled several hundreds of people to collaborate in responding to a crisis. Jennex (2003, 2004, 2005) classifies crisis management information systems as Emergency Information Systems (EIS). He defines an EIS as any system that is used "by organizations to assist in responding to a crisis or disaster situation" (p. 2148).

Jennex further adds that an EIS should be designed to: support communication during crisis response; enable data and gathering analysis; and support decision-making. Lee and Bui (2000) documented vital observation with the use of EIS during the massive earthquake that

hit Kobe, Japan, several years ago. Key lessons for EMS designers based on Lee and Bui's work are as follows. Relevant information should be included in the crisis response system prior to the actual crisis situation. This is to ensure that crisis responders have sufficient information to guide the decision-making processes in responding to a crisis. Lee and Bui (2000) imply that the task of gathering relevant information to support crisis response should be incorporated into part of the crisis response strategic initiative. Information from prior experiences should become part of the crisis management system. The system should somehow be able to capture both tacit and explicit knowledge about how prior crisis situations were dealt with. Similar findings were shown by Dorasamy et al. (2017) and Raman et al. (2014).

Lessons learned can guide future action. Lee and Bui (2000) in this regard imply that the design of any crisis response system should support some form of organizational memory component. In addition to designing relevant systems features to support crisis planning and response, researchers suggest that successful implementation of any crisis management system is contingent on how well people are trained to use such systems (Patton & Flin, 1999; Turoff, 1972; Lee & Bui, 2000, Dorasamy et al. 2017). Patton and Flin, for instance, suggest that CMS systems can be incorporated into crisis response related activities such as training, simulations, drills, and evacuation exercises. Turoff (1992) states that crisis management systems that are not normally used will not be used when an actual crisis situation occurs. The majority of post 9/11 literature on crisis management is confined within the realm of commercial entities (Braveman, 2003, Dorasamy et al. 2017).

Given the above, we therefore tested the following Hypothesis:

(H5): *There is a significant positive relationship between Emergency Management Process and Crisis Management.*

Thus, based on the above theories and proposed hypotheses, the following framework shown in Figure 1 was derived to be tested.

Methodology

This study employs a quantitative cross-sectional design to discover the role between information system quality and communication system and emergency crisis management. The data for this study was collected from various organizations and work sectors in Malaysia. The subjects for this study were the employees of the organizations who were affected by the movement control order due to the COVID-19 pandemic. These employees were required to work from home during this movement control order stipulated by the Malaysian Government.

Sample Selection

The sample size for this study was estimated with the GPower version 3.1. Based on the power of 0.95 with the effect size of 0.15, the effective sample size required for this study was 129 with the 4 predictors. Questionnaires were sent to a large population of employees in Malaysia

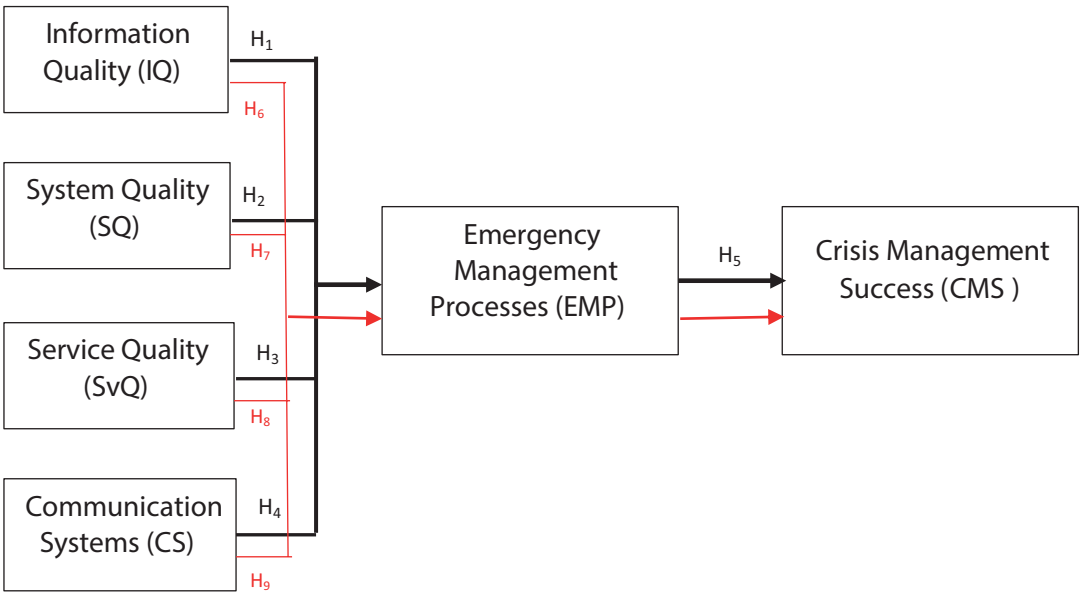

Figure 1: Proposed Theoretical Framework

and received a total of 156 sets. The total usable questionnaire was only 147 sets of the completed questionnaires.

Research instrument

Upon completion of the survey instrument development process, a pre-test process was conducted to validate the accuracy and aptness of the questionnaire. This pre-test procedure vetted the teething problems and content validity in the survey questionnaire, scale, and rectify them appropriately before the actual data collection takes place. This is to ensure the teething problems and survey questionnaire's language. Professional scrutiny and explanations on the precision and the correctness of a questionnaire will be considered. Zikmund et al. (2010) elaborate that these experts' opinion and advice from both industries as well as academic perspectives aid the researcher to be more precise in terms of the scale and understanding of the way these questions are phrased. In this pre-test, the initial questionnaire was distributed to and discussed with five industry specialists like team leads, operations managers (OPM), shift leads and technical leads, with extensive experience in remote working, as well as academicians, who are proficient and experienced in research methodology with a basic understanding of the research area undertaken. This process has been through two cycles to ensure rigorous tests have been conducted on the correctness and aptness of the instrument.

Common Method Variance (CMV)

Data cleaning was performed to detect and correct errors pertaining to data entry and any inconsistencies in the data obtained. Since data was obtained from a single source, it was checked for common method bias by using Harman's Single Factor Analysis in SPSS (see Table 1). The variance attributable to measurement method rather than to the construct or constructs purportedly represented by the measures is called common method variance (CMV). The total variance extracted shows that the extractions sums of loadings on the first factor is 22.125% which is less than 50%.herefore we can conclude that this data set does not suffer from common method bias (Podsakoff, 2003).

Data Analysis Method

As this study is explorative and due to the non-normality of the data this study utilized the PLS-SEM. The results of this study are reported as per the recommendations of Hair, Ringle and Sarstedt (2014) for the PLS-SEM. The recommendation for the indicators reliability at the item level is to have a standardized indicator loading of 0.70 and as for explorative studies the item loading is at 0.40. The internal consistency was tested with Cronbach's alpha and composite reliability. The suggested values for both are 0.70 and above. The average variance extracted value must be 0.50 or above for each construct. The path coefficient represents the value of the effect of the input variable for the output relationship. The r^2 is the measure of the explanation of the outcome variables with the input variables. The effect size (f^2) and Q^2 are the measurements of the model. The model effect size (f^2) is the measure of the effect of each input variables on the outcome variable. Cohen's (1988) study provides the guidelines for the understanding of the (f^2). The effect sizes of 0.32, 0.15 and 0.02 presents the large, medium and small effect respectively. The Q^2 represents the predictive relevance of the model that how much is the accuracy of the input variables in predicting the outcome variables. The Q^2 value of 0.02, 0.15 and 0.35 indicates the small, medium and large predictive relevancy of the model respectively (Hair et al., 2014). The current sample fulfilled the indicator figures for both reliability and validity, thus proves that the sample is reliable and valid for further analysis.

Table 1: Harman's Single Factor Analysis in SPSS

	Total Variance Explained					
	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	13.717	22.125	22.125	13.717	22.125	22.125
2	5.282	8.520	30.645	5.282	8.520	30.645
3	3.142	5.067	35.712	3.142	5.067	35.712
4	2.737	4.415	40.127	2.737	4.415	40.127
5	2.517	4.060	44.187	2.517	4.060	44.187

Extraction Method: Principal Component Analysis.

Data Analysis

Descriptive Statistics

The 147 samples were taken from various segments of industries in Malaysia. The respondents were largely male (51.7%). They are of 26 years old who, made up to 84.4% of the total samples. The samples were mostly married (53.1%) and hold a . college degree (94.6%).

Validity and Reliability

Indicator reliability is described as "the degree to which a set of variables or a single variable is consistent to that it proposes to measure" (Urbach & Ahlemann, 2010, p. 5). In PLS, indicator reliability is assessed by looking at the factor loadings. This has been utilized in more than 75 frameworks published in the MIS Quarterly between the years 1991 to 2012 (Ringle et al., 2012). "The rule of thumb is to accept items with a factor loading of 0.7 or higher" (p. 779) (Hair et. al., 2012). Nevertheless, for exploratory research designs, the factor loading for each item in a lower threshold between 0.5 – 0.6 is satisfactory (Chin & Dibbern, 2010; Ghozali, 2008; Henseler et al. 2009; Urbach & Ahlemann, 2010; Vinzi, Trincherra, & Amanto, 2010). Initial evaluation found that Average Variance Extracted (AVE) values for some of the constructs were found to be below 0.5. Therefore, the factor loading values were examined to determine the possibility for deletion of low factor loading items to increase the AVE ratings (p. 779, Hair et. al., 2006). Based on this, some of the factor loadings below the threshold of 0.6 was removed to increase the AVE rating (Hair, Ringle & Sarstedt, 2011). As a result, some items which had low ratings were eliminated from the scale. Table 2 illustrates the final measurements after running the PLS algorithm. The final measurement model after the removal of the items is shown in Figure 2. It showed that the items had

Table 2: Profile of the Respondents

	n	%
Gender		
Male	76	51.7
Female	71	48.3
Total	147	
Age		
Below 25 years of age	23	15.6
26 - 35 years of age	30	20.4
36 - 45 years of age	56	38.1
Above 46 years of age	38	25.9
Total	147	
Education		
High School	6	4.1
Diploma	45	30.6
Degree	62	42.2
Post Graduate Degree	32	21.8
Professional Cert	2	1.4
Total	147	
Marital Status		
Single	66	44.9
Married	78	53.1
Divorced	3	2.0
Total	147	

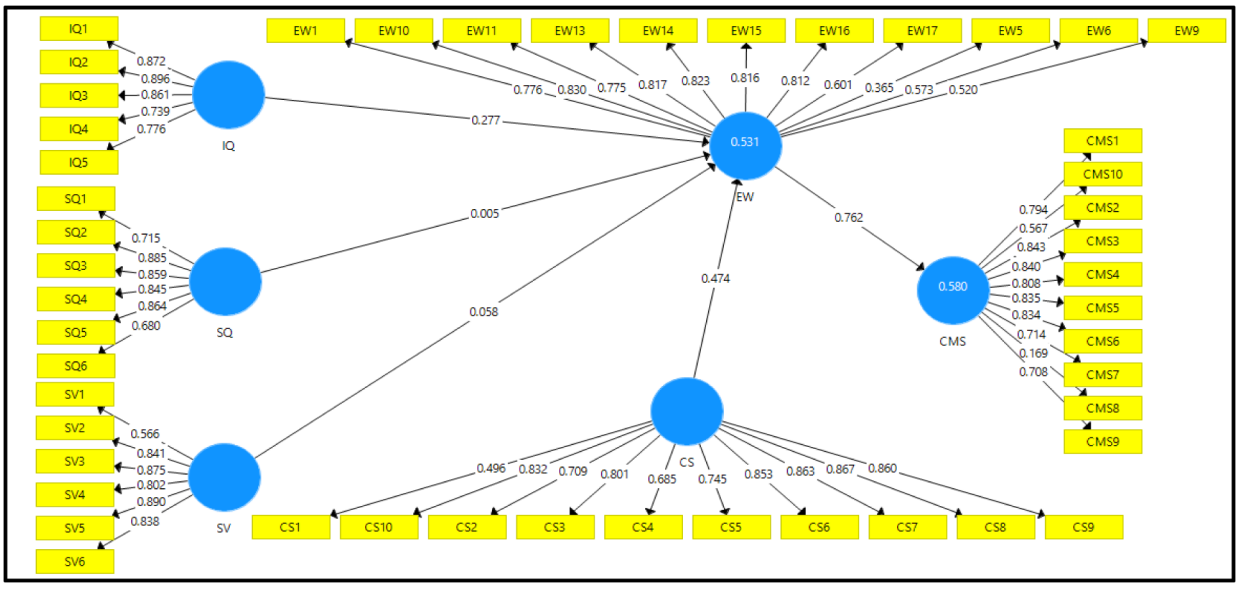

Figure 2: Measurement Model

sufficient convergent validity. The indicators of a formative measurement model represent the latent variable's independent drivers and should not correlate highly with one another. Therefore it is necessary to check for possible multicollinearity (Diamantopoulos and Winklhofer 2001), which is measured by the variance inflation factor (VIF). According to Hair et. al (2012) "the evaluation of multi-collinearity prior to assessment of the structural model is important to ensure that the predicament of multi-collinearity is not present". Multi-collinearity can be detected using variance-inflation factor (VIF) and tolerance value, as applied by nine models published in the MISQ from 1992 to 2011 (Ringle et al., 2012). In the present study, the collinearity diagnostic test was carried out using SmartPLS 3. It indicated that the VIF values are all less than 5. Higher degrees of multi-collinearity are reflected in lower tolerance values and higher VIF (Hair et al., 2010, pp. 201). As a general rule, values of tolerance less than 0.20 and a VIF above 5 indicate the existence of multi-collinearity (Leahy, 2000; Garson, 2012). This is illustrated in Table 2a, there is no multi collinearity present.

"The correlations between each construct and other constructs in the model (in the lower left off-diagonal elements) and the square roots of the average variance (AVE) values (with the diagonals)" is illustrated in Table 3 according to several prominent researchers like Hair et al. (2010). Table 4 gives an idea about the off-diagonal values of the indictor's cross loadings which are lesser than the outer loading values as per the rule of thumb (Hair et. al., 2014).

The test for the discriminant validity is to check the Fornell-Larcker criterion. Table 5 shows the results.

Another suggested test for discriminant validity is the HTMT ratio. The HTMT values must be at 0.90 or less to proof that the study has discriminant validity. The results depicted in Table 6 shows that the study has no evidence on the lack of discriminant validity.

Table 2a: Reliability Analysis

	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)	VIF
CMS	0.895	0.918	0.545	—
CS	0.925	0.938	0.607	2.214
EW	0.899	0.918	0.514	1.000
IQ	0.887	0.917	0.691	2.931
SQ	0.896	0.920	0.659	3.573
SV	0.894	0.918	0.655	2.558

Note: CMS: Crisis Management Success; CS: Communication System; IQ: Information Quality; SQ: System Quality; SVQ: Service Quality; EW: Emergency Work Management Process; AVE: Average Variance extracted; VIF: Variance Inflation Factor

Table 3: Latent Variable Correlations

	CMS	CS	EW	IQ	SQ	SV
CMS	1.00	0.72	0.76	0.47	0.48	0.60
CS	0.72	1.00	0.69	0.63	0.61	0.68
EW	0.76	0.69	1.00	0.61	0.56	0.55
IQ	0.47	0.63	0.61	1.00	0.79	0.58
SQ	0.48	0.61	0.56	0.79	1.00	0.71
SV	0.60	0.68	0.55	0.58	0.71	1.00

Note: CMS: Crisis Management Success; CS: Communication System; IQ: Information Quality; SQ: System Quality; SVQ: Service Quality; EW: Emergency Work Management Process

Table 4: Latent Variable Cross Loadings

	CMS	CS	EW	IQ	SQ	SV
CMS	1.00	0.72	0.76	0.47	0.48	0.60
CS	0.72	1.00	0.69	0.63	0.61	0.68
EW	0.76	0.69	1.00	0.61	0.56	0.55
IQ	0.47	0.63	0.61	1.00	0.79	0.58
SQ	0.48	0.61	0.56	0.79	1.00	0.71
SV	0.60	0.68	0.55	0.58	0.71	1.00

Note: CMS: Crisis Management Success; CS: Communication System; IQ: Information Quality; SQ: System Quality; SVQ: Service Quality; EW: Emergency Work Management Process

Table 5: Fornell – Larcker Criterion – Discriminant Validity

	CMS	CS	EW	IQ	SQ	SV
CMS	0.738					
CS	0.716	0.779				
EW	0.762	0.691	0.717			
IQ	0.467	0.628	0.612	0.831		
SQ	0.482	0.613	0.555	0.788	0.812	
SV	0.599	0.683	0.546	0.578	0.712	0.809

Note: CMS: Crisis Management Success; CS: Communication System; IQ: Information Quality; SQ: System Quality; SVQ: Service Quality; EW: Emergency Work Management Process

Path Analysis

The R^2 significant factor measures a construct's proportional difference that is described by the model or the tiny proportion of the total variation in the dependent variable explained by the independent variables jointly (Moran, 2006; Gujarati & Porter, 2010; Urbach & Ahlemann, 2010). The R^2 value ought to be amply high for the model to have a lowest level of descriptive power.

According to Ringle (2006) and several other studies conducted "values above 0.5, approximately between 0.3 – 0.5, and values lower than 0.19 are deemed substantial, average and weak, respectively" (Urbach & Ahlemann, 2010; Hock & Ringle, 2006). The R^2 value for the model indicated that the 57.7 percent in the crisis management was explained by emergency work management processes. However, another 51.8 percent in the emergency work management process was explained by the information system quality and communication system that existed. This was perceived by the organizations' employees. The R^2 for the information system quality of previous studies that used various IS and philosophical models ranged from 0.3 to 0.6 (Niehaves & Plattfaut, 2010).

The standardized path coefficients, t-values and significance level are presented in the Table 7. The path coefficient for the information quality on emergency work management was (β = 0.277, p = 0.023), which supports the H_1. The results showed that the effect of information quality on emergency work management process is positive and significant. The path coefficient for system quality on organizational resilience was (β = 0.005, p = 0.968), indicating a negative and insignificant effect of the system quality on emergency work management process. The results showed that the H_2 was not supported. The path coefficient for the service quality on emergency work management process was (β = 0.058, p = 0.677). Thus, the effect of the service quality on emergency work management process was negative and insignificant. Thus, not supporting H_3. The path coefficient for the communication systems on the emergency work management process was (β = 0.474, p = 0.000), indicating the positive effect of the communication systems on the emergency work management process and provided the evidence to support H_4.

The path coefficient for emergency work management process to the crisis management success was (β = 0.762, p = 0.000), showing that the effect of the emergency work management process on the crisis management success was positive and significant. This supported the H_5. Path coefficients results are shown in Table 7.

Table 6. Heterotrait-Monotrait Ratio (HTMT) – Discriminant Validity

	CMS	CS	EW	IQ	SQ	SV
CMS						
CS	0.769					
EW	0.801	0.725				
IQ	0.516	0.682	0.667			
SQ	0.548	0.677	0.604	0.877		
SV	0.653	0.737	0.564	0.633	0.809	

Note: CMS: Crisis Management Success; CS: Communication System; IQ: Information Quality; SQ: System Quality; SVQ: Service Quality; EW: Emergency Work Management Process

Bootstrapping

According to Hair et. al. (2009), PLS-SEM does not assume that data analyzed are normally distributed. Consequently, there is an implication that parametric significant tests used in regression analysis cannot be useful to test whether coefficients such as outer weights, outer loadings and path coefficients which are said to be significant. As an alternative, PLS-SEM heavily relies on a non-parametric bootstrapping procedure to test the coefficients for their significance (Davidson & Hinkley, 1997; Efron & Tibshirani, 1986). In this study, mediation was tested to see if emergency work management process mediates the relationship between information quality, system quality, service quality, communication systems and crisis management success. The results showed that the emergency work management process

Table 7. Hypothesis testing (resize table to fit nicely?)

	Relationship	Standard Beta (β)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics	P Values	Decision
H1	Information Quality-> Emergency Work Management Process	0.277	0.252	0.122	**2.269**	0.023	**Supported**
H2	System Quality -> Emergency Work Management Process	0.005	0.011	0.117	0.040	0.968	Not Supported
H3	Service Quality -> Emergency Work Management Process	0.058	0.079	0.140	0.417	0.677	Not Supported
H4	Communication Systems -> Emergency Work Management Process	0.474	0.478	0.112	**4.220**	0.000	**Supported**
H5	Emergency Work Management Process -> Crisis Management Success	0.762	0.769	0.053	**14.406**	0.000	**Supported**

only mediates the relationship between information quality, communication systems and crisis management success. Nevertheless, emergency work management process showed no mediation relationships between system quality, service quality and crisis management success. The results are illustrated in Table 8.

The final model is illustrated in Figure 3, conclusive to the hypotheses and mediation analysis.

Discussion

This study was motivated by the increasing pressure and stress amongst employees in Malaysia who were suddenly encouraged to work from various geographical locations and at various time due to the current COVID-19 pandemic. The study aimed to reveal the role of information system quality (ISQ) in handling emergency work management processes to enable effective crisis management success. The variables of ISQ i.e. information quality (IQ), system quality (SQ), service quality (SVQ), and communication systems (CS) were examined as independent variables in contributing towards better Emergency Work Management Process (EW) that leads to Crisis Management Success (CMS).

System Quality is defined as the performance of the information systems used by employees. It is measured in terms of reliability, convenience, ease of use, functionality, and other system metrics. System Quality (SQ) was found to be not significant in this study. Due to the emergence of COVID-19 and the movement control order by the Government of Malaysia has temporarily shift

Table 8. Mediation Analysis

	Relationship (Mediation)	Beta (β)	Sample Mean (M)	Standard Deviation (STDEV)	T Stats	P Values	Lower Limit 2.5%	Upper Limit 97.5%	Decision
H6	Information Quality -> Emergency Work Management Process -> Crisis Management Success	0.211	0.191	0.089	**2.365**	0.018	0	0.351	**Supported**
H7	System Quality -> Emergency Work Management Process -> Crisis Management Success	0.004	0.007	0.09	0.04	0.968	–0.183	0.175	Not Supported
H8	Service Quality -> Emergency Work Management Process -> Crisis Management Success	0.044	0.063	0.111	0.401	0.689	–0.14	0.3	Not Supported
H9	Communication System -> Emergency Work Management Process -> Crisis Management Success	0.361	0.369	0.097	**3.721**	0	0.178	0.552	**Supported**

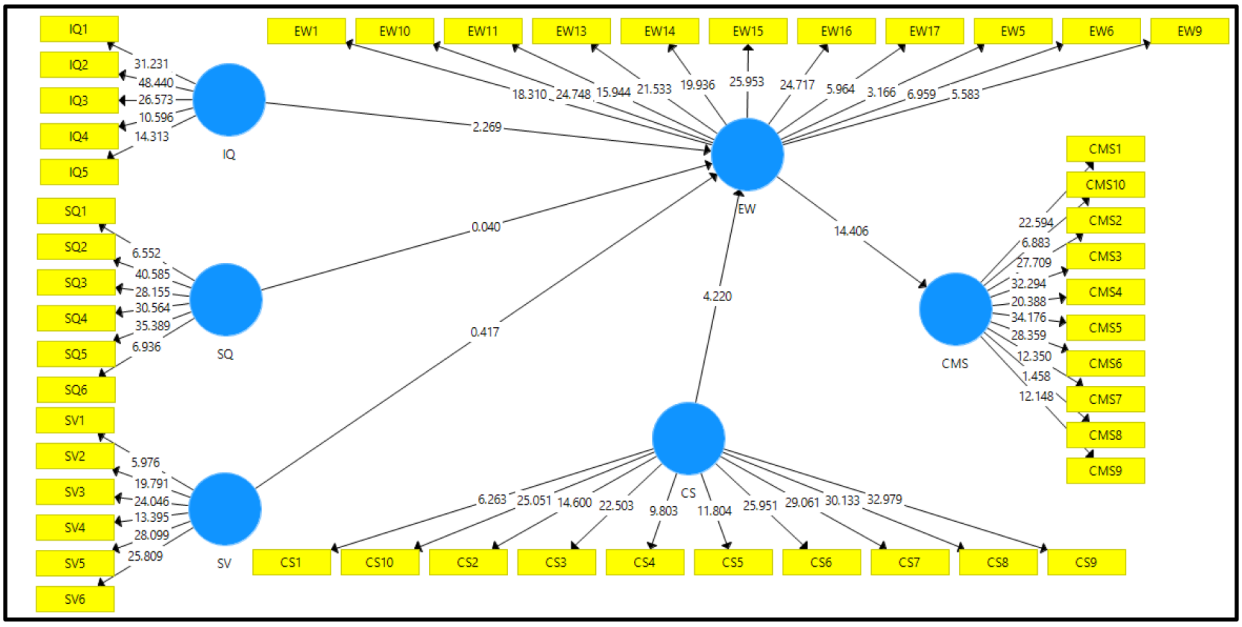

Figure 3: Final Structural Model

working patterns. Employees of non – essential services are forced to grip remote working lifestyle due to the pandemic. The sudden increase in work from home culture has presented issues as well as opportunities: one situation is start-ups such as Slack and Zoom and reputable titans including Microsoft and Google have opted to allow people to use their tools free of charge. These tools are far more accessible than companies' regular VPN services and systems which may be slow and insufficient to address the sudden surge in remote working culture among the employees. This could be because Corporate networks are not used to consuming a majority of their connections over virtual private networks (VPNs), thus experiencing rare quirks, despite the fact that internet service providers (ISPs) have come under duress to boost bandwidth limits so that the employees working remotely do not get cut off from their employers halfway through a meeting or work hour session.

Service Quality is defined as the Support for users by the organization's internal Information Technology Support Department (ITSD). Service Quality was measured in terms of responsiveness, reliability, and empathy of the support organization. The use of free tools and software means of communication and a standard set of manuals to perform self-maintenance in situations where system has issues have put the employees at a point that they are not fully dependant on external remote IT support. In addition, if there is a problem with connecting to the free software this can be solved independently by the employee itself using the standard FAQs and manuals available online. Thus, Service Quality of internal ITSD is not significant in this study due to the independence provided to employees to solve their issues.

Conclusion

This study recommends to possible practical and societal implications due to to IS quality and crisis management success. It contributes to possible tools and methods to empower remote working amongst employees in Malaysia. The COVID-19 pandemic has revealed that the use of digital technology—or Information Systems in an institutionalised context, offers temporal solutions to many organizations in remaining resilient during this crisis. Most companies across the globe have turned towards technology and digital applications to ensure business continuity. From zoom meetings, google hangouts/meet, skype to more simplified applications such as WhatsApp and YouTube, companies are trying their level best to ensure core learning run effectively. Nevertheless, the COVID-19 pandemic lessons suggest that, in Malaysia, there is an urgent need for companies to identify and prioritize possible crisis scenarios and conduct relevant risk assessment and mitigation plans, in light of using relevant Information Systems to support crisis situations. Corporations also need to ensure that the crisis management plans mirror closely to the overall communication protocols for example . alignment between crisis management operations and communication plans by using appropriate technology. Besides, to identify relevant Information Systems that will be used to manage the crisis in meeting stakeholder requirements for example. customers, employees, and shareholders.. Moving forward to ensure overall effectiveness of emergency management processes, companies need to ensure that appropriate information technology is well embedded and tested within the overarching Information System architecture, even before a crisis occurs.

Competing Interest Statement

All authors have read and approved the manuscript and take full responsibility for its contents. The authors have declared that no competing interest exists.

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ORIGINAL ARTICLE

COVID-19: Global Economic Impact of Novel Coronavirus with Special Reference to India

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ABSTRACT

The objective of the paper is to analyse the impact of coronavirus in major countries of the world with special reference to India. The outbreak of a novel human coronavirus has become a global health concern causing severe respiratory infections in humans. The virus is rapidly spreading and the number of persons infected across nations is significantly increasing as no specific therapies are available for the disease. Only isolation, containment and prevention of further spread are crucial to arrest the outbreak and to control infectious disease. There is direct disruption to global supply chains due to the outbreak of coronavirus. Lesser demand for goods and services which are imported and decrease of tourists around the globe are adverse effects of this disease. Higher public investment along with other fiscal support needs to be promoted and long term low interest rate is essential to push the global economy.

Keywords: Coronavirus, Health care System, Infection, Isolation, Outbreak, Quarantine, COVID-19.

Introduction

COVID-19 is an infectious disease caused by coronavirus which was discovered recently in December, 2019 in China. The World Health Organisation declared Coronavirus as a 'Pandemic' which refers to an epidemic that has spread at Global level affecting large numbers of people. The most recently discovered coronavirus causes coronavirus disease COVID-19 which has no proper medicine or vaccin(V.C.C. Cheng, S-C. Wong, K.K.W. To, P.L. Ho, K-Y. Yuen, 2020). An 'Outbreak of Coronavirus' is a sudden rise in positive cases of a disease in a different countries (C. S. Tarimo, Jian Wu, 2020). It is clear that the coronavirus can be transmitted from human to human (H.Koshle, R.Kaur, R.Basista, 2020). The coronavirus (COVID-19) outbreak resulted in substantial human suffering and major economic disruption. The Coronavirus may cause illness in animals or humans. Several coronaviruses are can cause respiratory infections ranging from the common cold to more severe diseases such as Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS) in human. Due to the high death rate and the potential to cause epidemic, it is needed to develop curative and preventive policy and action. However, the number of affected people is rising in 210 countries of the world in every hour. A large-scale programme to identify and screen exposed persons should help control the virus. However, this is a very challenging and time-consuming task. Due to lack of specific treatment or a vaccine, the psychological and economic stresses resulting from control measures such as mass quarantining should not be underestimated. Authorities need to be mindful of both the potential negative and positive impacts of social media in managing outbreaks of infection in the community.

Literature Review

There is scanty literature available on impact of Coronavirus. Some key literature are as follows.

S. Khan, A. Ali, R. Siddique, G. Nabi (2020) in their study mentioned that the year of 2020 began with deep concern

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associated with the onset of a novel coronavirus outbreak in Wuhan, China. Coronaviruses have become associated with deadly respiratory infections in humans following the emergence of severe acute respiratory syndrome. G. Kampf, D. Todt, S. Pfaender, E. Steinmann (2020) observed that human coronaviruses such as Severe Acute Respiratory Syndrome can persist on inanimate surfaces like metal, glass or plastic for up to 9 days, but can be efficiently inactivated by surface disinfection procedures with 62–71% ethanol, 0.5% hydrogen peroxide or 0.1% sodium hypochlorite within 1 minute. As no specific therapies are available for SARS-CoV-2, early containment and prevention of further spread will be crucial to stop the ongoing outbreak and to control this novel infectious thread. Jonathan M. Read et al (2020) estimated that the basic reproductive number of the infection to be significantly greater than one. They estimated it to be between 3.6 and 4.0, indicating that 72-75% of transmissions must be prevented by control measures for infections to stop increasing. Maimuna Majumder and Kenneth D. Mandl(2020) observed that the impact of preprints on discourse and decision making pertaining to the ongoing COVID-19 outbreak suggests that we must rethink how we reward and recognise community contributions during present and future public health crises. R. Prasad, Bindu Shajan Perappadan, Jyoti Shelar, Jacob Koshy, P.J. George (2020) mentioned that the new coronavirus is a respiratory virus which spreads primarily through droplets generated when an infected person coughs or sneezes, or through droplets of saliva or discharge from the nose. K. Roosa, Y. Lee, R. Luo, A. Kirpich, R. Rothenberg, J. Hyman, P. Yan, and G. Chowell, (2020) found that the containment strategies implemented in China are successfully reducing transmission and that the epidemic growth has slowed in recent days.

Coronavirus: A Global Perspective

The coronavirus outbreak is one of the biggest challenge to the economy and financial markets of the Globe. The economic activities remain subdued and very uncertain resulting significant suffering of human life and economic disruption. There is direct disruption to global supply chains due to the outbreak of coronavirus. Lesser demand for goods and services which are imported and decrease of tourists around the globe are adverse effects of this disease. Higher public investment along with other fiscal support needs to be promoted and long term low interest rate is essential to push the global economy. Financial market became risky with a sharp decline in equity prices, decline in commodity prices, a record low of interest rate in USA and low confidence of consumers and producers in business. Table 1 presents statistics of most affected 16 countries of the world.

Among top 16 most affected cases of Coronavirus, USA are the highest affected country with 10, 10507 positive cases and 56803 death cases. It is quite interesting to note

Table 1: COVID-19 Statistics in top 16 most affected Countries as on 28th April, 2020

Country	Total Positive Cases	Total Deaths	Recovered	Cases	Tests	% of Recovered to Case	% of Death to Case	% of Positive to Tests
World	3,072,863	211,738	924,578	1,936,547	NA	30.09	6.89	NA
USA	1010507	56,803	139,162	814,542	5,696,928	13.77	5.62	17.74
Spain	229,422	23,521	120,832	85,069	1,345,560	52.67	10.25	17.05
Italy	199,414	26,977	66,624	105,813	1,789,662	33.41	13.53	11.14
France	165,842	23,293	45,513	97,036	463,662	27.44	14.05	35.77
Germany	158,758	6,126	114,500	38,132	2,072,669	72.12	3.86	7.66
UK	157,149	21,092	NA	135,713	719,910	NA	13.42	21.83
Turkey	112,261	2,900	33,791	75,570	918,885	30.10	2.58	12.22
Russia	93,558	867	8,456	84,235	3,139,258	9.04	0.93	2.98
Iran	91,472	5,806	70,933	14,733	432,329	77.55	6.35	21.16
China	82,836	4,633	77,555	648	NA	93.62	5.59	NA
Brazil	67,446	4,603	31,142	31,701	339,552	46.17	6.82	19.86
Canada	48,500	2,707	18,268	27,525	733,705	37.67	5.58	6.61
Belgium	46,687	7,207	10,878	28,602	214,042	23.30	15.44	21.81
Netherlands	38,245	4,518	NA	33,477	193,950	NA	11.81	19.72
India	29,451	939	7,137	21,375	716,733	24.23	3.19	4.11
Switzerland	29,164	1,665	22,200	5,299	245,300	76.12	5.71	11.89

Source: World Meters, Coronavirus, WHO and Author's calculation

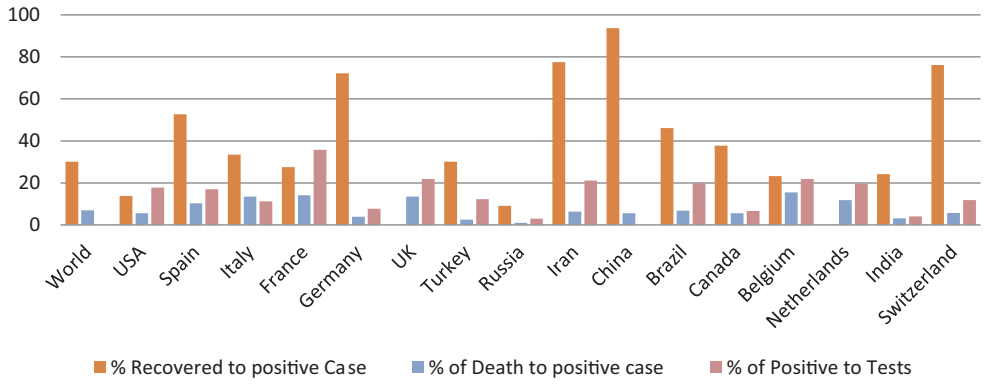

Figure 1: Percentage of Recovery, Death and Positive Case

that the percentage of death to positive cases is the highest in Belgium followed by Italy. Most of the European countries are the worst affected by coronavirus. Among the European countries, Italy is the worst affected due to high transmission rate and good economic relation with China. There is large number of tourists to China from Italy which transmitted the virus. Figure 1 clearly shows that percentage of recovery to corona positive cases is the highest in China followed by Iran, Switzerland and Germany. The percentage of death to positive cases is the higher in Belgium, France and Italy.

However, India has done much better so far as in terms of containing the spread of coronavirus is concerned with India reaching 16,000 cases on 80th day, whereas China had touched it on 14th day, Italy on 44th day and Iran on 28th day among others.

COVID-19 Cases and Deaths according to Age, Sex and Existing Conditions

The deaths due to coronavirus vary according to age, sex and conditions due to changes in immunity power.

(1) Age of Coronavirus Deaths COVID-19 Fatality Rate by AGE

The Coronavirus deaths vary as per age of affected person. **Death Rat**e = (number of deaths/number of cases) = **probability of dying if infected by the virus** (%). This probability of death differs depending on the age group. The range of age and death rate is shown in Table 2.

People in all ages can be affected by the disease, the senior people aged 80 and above are at the highest risk of death due to COVID-19 (Disease Control and Prevention Centres in China and South Korea). Cardiovascular disease and diabetes affected people with pre-existing medical conditions have a higher fatality rate than others in Coronavirus. Figure 2 presents the relationship of age with death rate due to coronavirus.

The Figure 2 shows the decreasing death rate with decrease in age. In general, relatively few cases are seen among children.

(2) COVID-19 Fatality Rate by Sex Ratio

The probability of death differs depending on sex as immunity power differs. Smoking habits among male increases the risks of respiratory complications.

Table-2: Doubling time of COVID-19 cases comparison with other countries

No. of cases	China	India	USA	France	Italy	Spain	Iran
100	1st Day	42nd Day	44th Day	41st Day	25th Day	32rd	8th
1000	5th Day	58th Day	53rd Day	49th Day	31st Day	39th Day	13th Day
2000	6th Day	63rd Day	56th Day	52nd Day	33rd Day	41nd Day	14th Day
4000	8th Day	66th Day	60th Day	55th Day	37th Day	43th Day	17th Day
8000	11th Day	72th Day	61st Day	60th Day	40th Day	46th Day	21st Day
16000	14th Day	80th Day	62nd Day	64th Day	44th Day	50th Day	28th Day
32000	19th Day		64th Day	68th Day	50th Day	53rd Day	38th Day
64000	28th Day		67th Day	73rd Day	55th Day	57th Day	50th Day
128000			71st Day	84th Day	67th Day	65th Day	
256000			73rdDay				
512000			83rd DAY				

Source: Medical Education and Drugs Department, Maharashtra

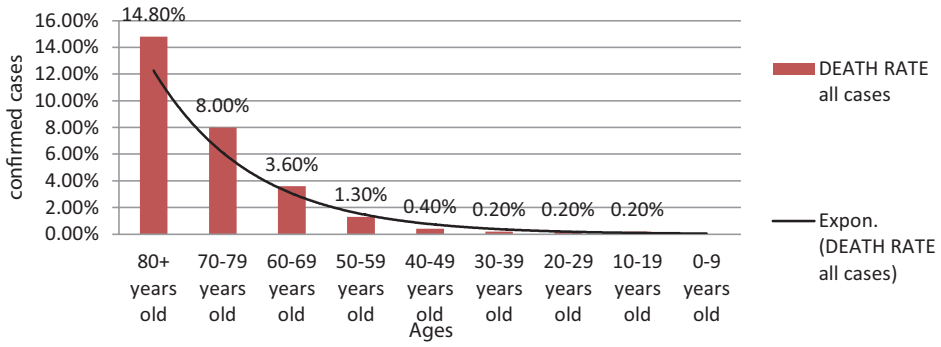

Figure 2: Age of Coronavirus Deaths COVID-19 Fatality Rate by Age

Table-3: Death Rate and Age

Age (in years)	Death Rate (All Cases) (%)
80 and Above	14.80
70-79	8.00
60-69	3.60
50-59	1.30
40-49	0.40
30-39	0.20
20-29	0.20
10-19	0.20
0-9	No fatalities

Sources: Global of Health Policy.

Table 4 shows that male coronavirus affected cases have 4.70 present death rate whereas female coronavirus affected cases have 2.80 % death rate. This variation may be due to variation in immunity power and different food habits of male and female.

Global Economic Impact of Coronavirus Pandemic

The global pandemic Corona Virus Disease (COVID-19) has put very serious challenge to the socio-economic condition of entire world, including India. At a global level as on April 28, 2020, there are infected (confirmed cases) of 30 lakh peoples and more than 2.0 Lakhs deaths which are 7 per cent of the total cases, affected more than 210 countries and damaged economies to irrecoverable levels. Outbreak of the coronavirus has already resulted in significant human suffering and economic disruption. Declaration of Containment Zones in affected areas, restrictions on labour movement, and travel from one place to another place and shutdown in many service sector activities reduced the transmission of virus. These steps and restrictions by the Government resulted in a reduction in substantial output of goods. Subsequently, the other countries such as Korea, Italy, USA and other European Countries have started containment measures

Table 4: Death Rate by Sex

Sex	Death Rate Confirmed cases (%)	Death Rate All cases (%)
Male	4.70	2.80
Female	2.80	1.70

Sources: Global of Health Policy.

like quarantines and border closures. The effects of these restrictions are important because it causes the disruption to supply network of the world along with reduced final demand for consumer and producer goods and services imported and reduction in international tourism and business travel.

Global Risks of Coronavirus and Economic Growth

Economic growth reduces if downside risks materialize more due to outbreak of corona virus. If Virus outbreaks spread more widely in the European countries, it has the adverse effects on economic growth of world. The international trade becomes much worse and more widespread. Many studies show that in 2020, growth rate of Gross Domestic Product of world may be reduced by 1.50 per cent which could push several countries into recession and severe depression. The important downside risks are as follows.

1) The adverse impacts on trade and investment will be aggravated .Further, other bilateral trade tensions between the United States and Europe may continue. There will be more trade disruptions and disputes which will require intervention of World Trade Organisation (WTO).

2) A downside risk and uncertainty may arise due to lack of official trade agreements. The prospects of economic growth may be reduced significantly and more volatile if export and import of trade between the European Union and United Kingdom will revert back to WTO terms and conditions after 2020. The volatility

and instability in financial market conditions and consumer confidence shall deteriorate day by day.

3) More disruptions across the globe will arise due to continuous financial vulnerabilities, slower growth rate, rise in corporate debt and deteriorating credit quality. The recently floated bonds which are BBB-rated may be downgraded to non-investment grade due to the coronavirus spread. If the spread of virus will continue, the risk of significant corporate stress may lead to economic downturn.

Monetary Policy and Fiscal Policy to Tackle Adverse Impact of COVID-19 in the World

Due to uncertainty out of the coronavirus outbreak, monetary policy needs to be proactive and supportive for economic growth. So, it is essential that the monetary policies of a country may be n supportive to ensure that long-term interest rates shall remain low. The quick impact of monetary policy may be reflected in prices of asset and investment of private sector. Many emerging economies with flexible exchange rate have scope to further simplify monetary policy if inflation is reduced.

It is further necessary to enhance investor's confidence by adopting appropriate fiscal and structural measures. Extreme low interest rates can provide an opportunity to activate the fiscal policy and to strengthen consumer's demand. This increase in temporary expenditures will smoothen the impact of the coronavirus outbreak on marginalised social groups. When the effects of the pandemic starts to decline, the discretionary support of fiscal policy will depend on the success of cyclical movements, fiscal stabilizers and debt sustainability policy.

These are as follows-

1) Some discretionary fiscal policies are undertaken in many advanced countries including United Kingdom, Germany, Canada, Korea, Japan, and France. For debt sustainability, more fiscal stimulus measures should be implemented in a phased manner.

2) In many advanced economies with high debt and deficits in budget, there is limited scope for sizeable discretionary fiscal policy. Changes in the structure of expenditure and taxes can support economic activity to enhance economic growth.

3) A tighter fiscal policy with social transfers to marginalised groups safeguarding and maintaining balance between public and private investment is highly essential in view of coronavirus.

Expenditure in health care, sanitation and education should be increased to promote demand and push the standard of living of people. Reductions in policy interest rates and more reforms to increase competition can work effectively to bring higher growth. G20 countries gain from collective action and cooperation among themselves. The forecast of OECD on global economic impact of COVID-19 on real GDP is quite interesting which is given in Table 5.

The projection shows decline in real GDP in all countries after outbreak of Coronavirus in the world except Brazil where the difference is 0.00.

Novel Coronavirus Outbreak and India's Health Care System

India is facing for a potential explosion of coronavirus cases as it is thickly populated with large number of poor people with less resources. India's health performance index which includes access to primary care, maternal mortality rates and child health, runs the spectrum, with some states outperforming others by almost 2.5 times. The best performer is Kerala that found and treated India's first three corona cases. The worst is Maharashtra which has detected many positive cases and deaths. The inequalities are further pronounced between urban and rural areas with most of the available beds are concentrated in Indian cities. According to WHO, India spent an average of $62.72 per person on health care in 2016 as compared to China's $398.33. Inequalities could make prevention even harder. In places with limited access to clean water, washing hands to prevent the spread of the virus is difficult. Health management system is very inadequate for India's existing problems. With limited access to clean water, washing hands to prevent the spread of the virus is very difficult (Gagandeep Kang, 2020). These inequalities are not just a reflection of not spending enough on health care, but also of not knowing where to spend.

COVID-19 Statistics in India

States are taking aggressive action to slow down the spread of the novel coronavirus and prepare their health care systems for dealing with those affected by COVID-19. Many states have also implemented policies to increase access to COVID-19 testing and treatment, as well as continued management of other health conditions. State wise COVID-19 statistics are shown in Table 6.

Table 5: Forecasts on Real GDP (% change in growth)

	2019	Interim EO Projections	2020 Difference from November EO	Interim EO projections	2021 Difference from November EO
World	2.9	2.4	–0.5	3.3	0.3
G20	3.1	2.7	–0.5	3.5	0.2
Australia	1.7	1.8	–0.5	2.6	0.3
Canada	1.6	1.3	–0.3	1.9	0.2
Euro area	1.2	0.8	–0.3	1.2	0.0
Germany	0.6	0.3	–0.1	0.9	0.0
France	1.3	0.9	–0.3	1.4	0.2
Italy	0.2	0.0	–0.4	0.5	0.0
Japan	0.7	0.2	–0.4	0.7	0.0
Korea	2.0	2.0	–0.3	2.3	0.0
Mexico	–0.1	0.7	–0.5	1.4	–0.2
Turkey	0.9	2.7	–0.3	3.3	0.1
United Kingdom	1.4	0.8	–0.2	0.8	–0.4
United States	2.3	1.9	–0.1	2.1	0.1
Brazil	1.1	1.7	0.0	1.8	0.0
China	6.1	4.9	–0.8	6.4	0.9
India	4.9	5.1	–1.1	5.6	–0.8
Indonesia	5.0	4.8	–0.2	5.1	0.0
Russia	1.0	1.2	–0.4	1.3	–0.1
Saudi Arabia	0.0	1.4	0.0	1.9	0.5
South Africa	0.3	0.6	–0.6	1.0	–0.3

Source: OECD Interim Economic Outlook, 2020.

The total number of novel coronavirus cases in India is increasing every day. Maharashtra is worst hit with coronavirus. The government is taking strict measures to stem the spread of the deadly coronavirus, which has killed seven people. Gujarat, Bihar and Maharashtra reported a death each on Sunday, while four deaths were earlier reported from Karnataka, Delhi, Maharashtra and Punjab, the Health Ministry said. Eighty cities including Delhi, Mumbai, Kolkata, Chennai and Bengaluru went into complete lockdown till 31 March. Trains, metros and inter-state buses have been shut from today, only essential services like milk, vegetables, medicines, grocery and ATMs will be available during the shutdown. The Centre has issued directions to state governments, asking them to take legal action against those who are found violating the lockdown orders.

The weekly status of Coronavirus Positive Cases in India is given in Table 7. It shows declining growth rates of positive cases in India.

Less Testing LABS and Inadequate Hospitals in India

India is enhancing its ability to test and detect the virus. But important concern over India's overstretched health infrastructure is a single state-run hospital for every 55,591 people on average and a single hospital bed for every 1,844 people. India needs about 10 times more doctors to meet the norms prescribed by the World Health Organization, a shortfall of at least 500,000 doctors. Experts fear that an epidemic would cause other routine health care functions to suffer. All states in the country are focused on controlling the transmission and curtailing morbidity and mortality due to the pandemic. It is important to see that how this infection and its fallouts can impact the healthcare scenario in India **(**Anu Grover, Meenu Grover Sharma**, 2020).** In India, the government facilities to test for the virus include 52 labs belonging to the Viral Research and Diagnostic Laboratories network of the Indian Council of Medical Research (ICMR), 10 labs under the National Centre for Disease Control (NCDC) and the NIV.

Pre-existing medical conditions (Comorbidities)

Patients who reported no pre-existing (comorbid) medical conditions had a case fatality rate of 0.9%. Pre-existing illnesses that put patients at higher risk of dying from a COVID-19 infection are given in Table 9.

Table 6: State wise COVID-19 statistics as on 21 April, 2020

S.No	Name of State / UT	Total Confirmed cases	Cured/ Discharged / Migrated	(Cured/ Confirmed ×100)	Death	No of affected districts
1	A and N Islands	18	11	61.11	0	1
2	Andhra Pradesh	813	120	14.76	24	11
3	Arunachal Pradesh	1	1	100	0	1
4	Assam	35	19	54.29	1	12
5	Bihar	143	46	32.17	2	14
6	Chandigarh	27	14	51.85	0	1
7	Chhattisgarh	36	26	72.22	0	5
8	Delhi	2248	724	32.21	48	11
9	Goa	7	7	100	0	2
10	Gujarat	2407	179	7.44	103	27
11	Haryana	262	140	53.44	3	19
12	Himachal Pradesh	40	18	45	1	6
13	Jammu and Kashmir	407	92	22.6	5	14
14	Jharkhand	49	8	16.33	3	8
15	Karnataka	427	131	30.68	17	21
16	Kerala	438	323	73.74	3	14
17	Ladakh	18	14	77.78	0	2
18	Madhya Pradesh	1592	148	9.3	80	27
19	Maharashtra	5652	789	13.96	269	32
20	Manipur	2	2	100	0	2
21	Meghalaya	12	0	0	1	1
22	Mizoram	1	0	0	0	1
23	Odisha	83	32	38.55	1	10
24	Puducherry	7	3	42.86	0	2
25	Punjab	251	49	19.52	16	19
26	Rajasthan	1890	230	12.17	27	26
27	Tamil Nadu	1629	662	40.64	18	35
28	Telengana	945	194	20.53	23	28
29	Tripura	2	1	50	0	2
30	Uttarakhand	46	23	50	0	52
31	Uttar Pradesh	1449	173	11.94	21	6
32	West Bengal	456	79	17.32	15	17
Total number of confirmed cases in India		**21393**	**4258**	**19.90**	**681**	**429**

Source: Ministry of Health and Family Welfare, Govt.of India.

Table 7: Weekly status Coronavirus Positive Cases in India

Weekly Status	Corona Positive Cases in India	Weekly Growth rate (%)
17 March, 2020	137	—
25 March	606	342.34
1 April	1966	224.42
8 April	5749	192.42
15 April	12021	109.10
21 April	20004	66.41
28 April	28380	41.87

Source- Health and Family welfare, Govt. of India and Authors Calculation

The fatality rate for those with cardiovascular disease was the highest. Diabetes and respiratory diseases too increased the fatality rate.

The health obsesrvatory expenditure is shown in Table 10.

The total health expenditure on health in India is only 4.7 percent of GDP which is low compared to other countries. There is urgent need to increase it to at least 6 percent of GDP.

Table 8: COVID-19 Test Centres in India

S. No	State/UT	Total List of Medical Lab	DHR/ICMR laboratories	State/UT	Total List of Medical Lab	DHR/ICMR laboratories
1	A.P	4	4	Maharashtra	3	2
2	A & N Islands	1	0	Manipur	2	1
3	Assam	4	4	Odisha	1	1
4	Bihar	1	3	Puducherry	1	1
5	Chandigarh	1	1	Punjab	2	0
6	Chhattisgarh	1	1	Rajasthan	5	2
7	Delhi-NCT	1	1	Tamil Nadu	4	7
8	Gujarat	2	4	Tripura	1	0
9	Haryana	2	0	Telangana	2	2
10	H.P	2	0	U.P	3	1
11	J & K	3	1	Uttarakhand	1	2
12	Jharkhand	1	1	West Bengal	2	5
13	Karnataka	5	2	Maharashtra	3	2
14	Kerala	4	1	Manipur	2	1
15	M.P	2	4	Odisha	1	1
16	Meghalaya	1	0	Puducherry	1	1
Total					**52**	**57**

Source: Indian Council of Medical Research, New Delhi.

Table-9: Pre Existing Condition and Death Rates

Pre-Existing Condition	Death Rate confirmed cases	Death Rate all cases
Cardiovascular disease	13.20%	10.50%
Diabetes	9.20%	7.30%
Chronic respiratory disease	8.00%	6.30%
Hypertension	8.40%	6.00%
Cancer	7.60%	5.60%
no pre-existing conditions		0.90%

Source: Global of Health Policy.

Table 10: Health Observatory Expenditure in India

Total population (2016)	1,32,41,71,000
Gross national income per capita (PPP international $, 2013)	5,350
Life expectancy at birth m/f (years, 2016)	67/70
Probability of dying under five (per 1 000 live births, 2018)	37
Probability of dying between 15 and 60 years m/f (per 1 000 population, 2016)	214/138
Total expenditure on health per capita (Intl $, 2014)	267
Total expenditure on health as % of GDP (2014)	4.7

Source: World Health Organisation.

The Economic Impact of COVID-19 in India

The Indian economy is badly affected due to the impact of COVID-19, lock down for 40 days and large scale expenditure on treatment of corona positive patients. The Indian stock market has been significantly affected for which both Sensex and Nifty went down and affected most companies. COVID-19 severely hits aviation, retail, manufacturing, automobile, service, travel, hospitality and others. Many employees have gone on a short leave without pay or are facing cuts in their salary. Nearly 90% of India's workers belong to the informal or unorganised sectors. These workers are the most severely affected by the COVID-19 lockdown across the country. The Indian government announced a $22.6bn stimulus package to aid the poor who are affected by the coronavirus outbreak. The Government also plans to provide wheat, rice and pulses free of cost to approximately 800 low-income families over the next three months. Further, cooking-gas cylinders will be provided to 83 million poor families and a $13.31 cash-transfer will be provided to 30 million senior citizens. The government will provide $6.65 per month to approximately 200 million poor women for three months. Medical insurance worth five million rupees will be provided for healthcare workers including doctors, nurses and paramedics.

The economic impact of COVID-19 on important sectors in India is discussed below.

(1) Agriculture, Mining and Quarrying

The Coronavirus outbreak can adversely impact the Indian economy by a whopping $29 billion in a

hypothetical worst-case scenario, according to a study conducted by Asian Development Bank (ADB) on the economic impact of COVID-19 outbreak on developing Asia region. As per the ADB study, GDP and employment losses in the worst-case scenario from COVID-19 will be in sectors such as agriculture, mining and quarrying ($6.89 billion), business, trade and public services ($15.86 billion), light and heavy manufacturing and construction ($3.39 billion), hotel and restaurants ($1.83 billion) and transport services ($1.93 billion), taking the aggregate losses to $29.91 billion. The Coronavirus outbreak has serious implication for the Indian economy. It has disrupted production and transport of key equipment imported for use in solar power plants in India and is likely to jack up the prices of solar power apart from impacting projects' completion schedule unless urgent measures are taken.

(2) Business, Trade, Personal, and Public Services

Light/Heavy Manufacturing, Utilities, and Construction sectors are likely to be the worst-affected by the coronavirus pandemic. However, India's top imports crude oil and gems and jewellery. Which collectively account for 46 per cent of total imports are relatively insulated from the public health crisis in China. The daily death toll due to the virus is still very high and given the number of infected people, the battle with the virus is far from over, it said. Since the severity of the virus became known, global financial markets have been on the edge. Further, five import items heavily depend on China such as electrical machinery, machinery and mechanical appliances, organic chemicals, plastics and optical and surgical instruments. These items collectively account for 28 per cent of India's import basket which will be reduced.

(3) Hotel and restaurants and Other Personal Services

The National Restaurant Association of India stated that one of the sectors worst affected by COVID-19 will be food services, estimated at Rs 4,23,865 crore in India and employing more than 700,000 people, As brick-and-mortar businesses shut down, restaurants are struggling, but small efforts are afoot to salvage whatever they can. (Anoothi Vishal, 2020).

(4) Transport Services

The world's biggest lockdown has brought transportation of goods in India to a near halt, even though the central government has exempted the sector from restrictions to halt the spread of coronavirus. Daily movement of trucks has collapsed to less than 10% of normal levels, according to All India Motor Transport Congress, an umbrella body of goods vehicle operators representing about 10 million truckers. Road transport accounts for about 60% of freight traffic in India and 87% of its passenger traffic, according to the Ministry of Road Transport and Highways.

The economic impact assessment done by Asian Development Bank is shown in Table 11. The nature of impact depends on shorter or longer containment.

In case of longer containment, the employment and GDP will reduce significantly. Maximum employment loss will be felt in transport sector and GDP will reduce significantly in manufacturing sector. The total economic impact of COVID-19 in India is shown in Table 10.

The economic impact in India assessed by Economist Intelligence Unit; Observer Research Foundation; MOSPI

Table 11: Economic Impact Assessment COVID–19 in India

Sector	Shorter containment, smaller demand shocks		Longer containment, larger demand shocks		ADDITIONAL Impact if a significant outbreak occurs	
	as % of sector GDP	as % of sector employment	as % of sector GDP	as % of sector employment	as % of sector GDP	as % of sector employment
Agriculture, Mining and Quarrying	–0.14	–0.14	–0.34	–0.33	–1.69 to –4.36	–1.7 to –4.32
Business, Trade, Personal, and Public Services	–0.12	–0.09	–0.29	–0.21	–1.68 to –4.55	–1.73 to –4.66
Light/Heavy Manufacturing, Utilities, and Construction	–0.34	–0.38	–0.84	–0.95	–1.45 to –4.22	–1.39 to –3.92
Hotel and restaurants and Other Personal Services	–0.06	–0.08	–0.15	–0.2	–1.8 to –4.58	–1.78 to –4.55
Transport services	–0.1	–0.1	–0.24	–0.23	–1.75 to –4.57	–1.75 to –4.57
TOTAL (Economy–wide)	–0.18	–0.18	–0.44	–0.44	–1.64 to –4.43	–1.64 to –4.33

Source: Asian Development Bank / ERCD data Library.

AQ1 **Table 12:** Sector-wise Economic Impact of COVID-19 in India

Sector	total GDP	Employment (in 000)	as % of sector GDP	as % of sector employment	as % of total GDP
Agriculture, Mining and Quarrying	2718732	88.05	28.32	–0.02	–0.01
Business, Trade, Personal, and Public Services	2718732	196.44	16.34	–0.01	–0.01
Hotel and restaurants and Other Personal Services	2718732	201.83	45.59	–0.18	–0.17
Light/Heavy Manufacturing, Utilities, and Construction	2718732	98.88	14.13	–0.02	–0.01
Transport services	2718732	54.74	4.71	–0.04	–0.02
All TOTAL (Economy-wide)	2718732	639.95	109.08	–0.02	–0.02

Source: Asian Development Bank / ERCD data Library.

Table 13: Economic Impact of COVID-19

Sector	Gross Value Added (GVA) in %
Financial, real estate & professional services	–17.3
Mining & quarrying	–14.7
Electricity, gas, water supply & other utility services	–13.9
Construction	–13.3
Trade, hotels, transport, communication & broadcasting services	–9.7
Overall GVA	–9.3
Manufacturing	–6.3
Agriculture, forestry & fishing	–1.3
Public administration, defence & other services	–0.4

***Source*:** Economist Intelligence Unit; Observer Research Foundation; MOSPI.

shows that financial, real sector and professional sector will be the major loser with –17.3 gross value added followed by mining & quarrying and others.

Suggestions and Best Practices for Protection against COVID-19

The following suggestions and best practices are forwarded to control spread of Coronavirus.

1) Washing with soap

Our hands contain innumerable viruses and bacteria due to frequent use and exposure. To remove many of the virus and bacteria, complete washing with water using soap or sanitizer helps removing virus.

2) Alcohol-based hand sanitizer

The alcohol based hand sanitizer will inactivate the virus since its presence in hand sanitizers dissolve the lipid envelope. The alcohol tends to also change the shape of the mushroom-shaped protein structures that stick out of the lipid envelope. To be effective, it is necessary for the sanitizers to contain at least 60 per cent alcohol. Unlike soap lather, the alcohol does not come in contact with all parts of the hand. So care should be taken to use sufficient sanitizer to increase the coverage.

3) Using a mask

Transmission through droplets from coughing and sneezing is one of the major routes of virus spread. So, Medicated masks help to prevent the spread of coronavirus infection. Masks may be effective in preventing transmission of coronavirus and can reduce the risk of inhaling droplets containing the virus if worn properly.

4) Social distancing

Social Distancing also called physical distancing means keeping space between yourself and other people. It is one of the best tools to avoid being exposed to this coronavirus because when someone coughs or sneezes they spray small liquid droplets from their nose or mouth which may contain virus. The World Health Organisation says that you should maintain at least 1 metre (3 feet) distance between yourself and anyone who is coughing or sneezing.

5) Avoid touching eyes, nose and mouth

To help prevent infections, it is necessary to keep our hands away from our eyes, nose and mouth. Hands touch many surfaces and can pick up viruses it can then transfer the virus to our eyes, nose or mouth. Once contaminated, hands can transfer the virus to our eyes, nose or mouth. From there, the virus can enter our body and can make us sick.

6) Practise respiratory hygiene

It means covering our mouth and nose with our bent elbow or tissue when we cough or sneeze. Then dispose of the used tissue immediately since the droplets spread virus.

7) Early medical care

Stay home is the best method to keep someone away from infection of coronavirus. If anyone having fever, cough and difficulty in breathing, seek medical attention and call in advance to the health professionals and local health authority.

8) Therapeutic strategies

Due to the high rate of mortality and potential to cause further epidemics, it is necessary to develop therapeutic and preventive strategies.

Conclusion

There is an urgent need for health professionals and policy makers to recognize the intensity and magnitude of the coronavirus and its grave socio- economic impact. Since the government takes policy decisions regarding the Coronavirus which has grave human, societal, and economic consequences. It's success lies in effective implementation and wholehearted support from all stakeholders. Concentrated effort and global cooperation is the need of the hour because prevention is beyond the scope of any one country. Effective implementation of government policies require full support of all stakeholders, including Governments, health professionals, the media, non-governmental organizations, communities and individuals. To completely do away with the coronavirus pandemic, it is necessary for international agencies and national governments to play the effective role in developing and implementing amicable and target oriented policies which prioritise the diagnosis, therapeutics and vaccines for the virus globally.

Competing Interest statement

The authors have declared that no competing interest exists.

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COVID-19 and Lockdown in India: Challenges for the Tribal Economy of Odisha

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ABSTRACT

This paper, drawing on secondary sources and extensive fieldwork, grapples with the implications of lockdown for the tribal economy of Odisha. Minor forest produce (MFP) is a critical component of the tribal economy in Odisha. COVID-19 and subsequent mitigation measures such as lockdown and restriction on movement coincided with the peak season for gathering of MFP. Lockdown, by disrupting collection and trading of MFP, has severely affected the livelihood base of the tribal people and other forest dwellers. Governments at the Centre and state have taken up several measures to deal with this difficult situation. Governments exempted work under Mahatma Gandhi National Rural Employment Act (MGNREGA) and collection of MFP during the second phase of lockdown. However, distress sale of MFP and loss of income have emerged as major concerns due to delay in policy decisions. Reverse migration of laborers to tribal villages poses the new challenge to state's preparedness. At a broader level, the current crisis situation reminds us to seriously think in the direction of implementing tribal rights over forest and forest produce.

Keywords: Lockdown; tribal economy; food insecurity; minor forest produce; minimum support price; tribal rights.

Introduction

The COVID-19 pandemic has presented before us an unprecedented crisis situation. The International Labor Organization (ILO) in its report entitled "ILO Monitor 2nd Edition: COVID-19 and the World of Work" describes the corona virus pandemic as "the worst global crisis since World War II". National lockdown in order to fight the COVID-19 pandemic was announced by the Prime Minister of India, Narendra Modi, on March 24, 2020. The lockdown of three weeks came into force on March 25, 2020. Such lockdown was an essential step undoubtedly. However, lockdown has had an uneven impact on the Indian society characterized by vast inequalities. Adverse effects of the lockdown on the country's marginalized communities are a major concern. These marginalized communities include the daily wage laborers, rural and urban informal sector workers, marginal and landless farmers, and forest dependent tribal people. This paper examines the impact of the lockdown on the forest dwelling tribal communities in the state of Odisha. I argue that it has increased the burden of the tribal economy in spite of the appreciable measures taken by the central as well as state governments.

The paper proceeds in Section 2 by briefly discussing the methodology. Section 3 describes the significance of minor forest produce (MFP) for the tribal economy in the state of Odisha. Section 4 analyses key institutional and policy interventions by the Central and state governments with regard to MFP. Section 5 examines the impact of the lockdown on the collection and sale of MFP by forest-dependent communities. And, Section 6 concludes by drawing out the implications of the recent policy decisions for the future of MFP aspect of the tribal economy.

Methodology

This paper is based on data collected mainly from the secondary sources. A part of Section 3 dealing with the importance of MFP for the tribal people is informed

by my ethnographic study supplemented by field surveys, interviews and focus group discussions in the tribal villages of Odisha. The field work was carried out in the remote tribal villages of the districts of Rayagada, Koraput, Kalahandi, and Kandhamal during 2009-19 to study different aspects of the tribal societies in Odisha. These villages include Rasijhiri, Mandibisi, Kebidi, Malijharan, Hatimunda, Gunner, Muskuta, Phatkimahul, Pukijal, Hatsil, Maikanch, Sakata, Denguni, Amaguda, Garta, and others. Conversations with some local people during the lockdown provided useful data as well.

Tribal population and MFP in Odisha

The state of Odisha has a significant tribal population in remote tracts of its land, dense forests, and hilly terrains. Tribal people constitute 22.85% of the total population in Odisha. This is more than twice that of the national level. With a total tribal population of 9.59 million, Odisha ranks third in the country. According to the Census of India 2011, there are about 32, 918 forest fringe villages in Odisha. Out of a population of 23.38 million in these villages, 7.04 million belong to the Scheduled Tribes. The southwestern part of the state has the highest concentration of tribal people. The tribal dominated districts in the state are Mayurbhanj, Keonjhar, Sundargarh, Kandhamal, Koraput, Rayagada, Malkangiri, Nabarangpur, and Gajapati. In these nine districts, tribal people constitute around 50% of the population. "Of the 645 Scheduled Tribes enlisted in India, Odisha hosts the largest number - 62 indigenous tribal communities reside in the state" (Mallick & Ganapathy, 2017). Out of 62, 13 are primitive tribes. The most important tribal communities are the Kondh, Oraon, Paraja, Santhal, Gond, Juang, Gadaba, Bonda, and Sauora.

The Socio Economic Caste Census (SECC) 2011 of the Government of India reveals that while 54.28% households in Odisha are landless, 63.46% households in the tribal districts of the state are landless. The incidence of poverty among the tribal people is 75.8% in rural Odisha. While tribal people constitute 28% of the rural population, they constitute more than 43% of the rural poor. According to the Food Security Atlas of Rural Odisha 2008, the districts with a higher proportion of forests and tribal population in the Eastern Ghats and central tableland lay in the most food insecure categories in terms of the Food Security Outcome Index (FSOI). Rayagada, Gajapati, Malkangiri, and Kandhmal are extremely insecure districts. Nabarangpur, Sundargarh, Keonjhar, and Korpaut are severely insecure districts. Mayurbhanj is moderately insecure.

The fragile economy of the forest dwelling tribal population and particularly vulnerable tribal groups (PVTGs) in Odisha is dependent on the collection and sale of minor forest produce (MFP) and non-timber forest produce (NTFP). Both timber and NTFP are important for the tribal economy. However, due to "the clamping down of a host of government restrictions on timber produce, tribal people and other forest dependent non-tribal groups have drifted towards non-timber forest produce (NTFP)" (Parthasarathy & Patnaik, 2003, p. 2). NTFP, popularly called MFP, stands for all non-timber forest produce of plant origin. NTFP includes tendu leaves, sal leaves, tejpatta (bay leaves), mahua (or mohua) flowers, mahua seeds, neem seeds, karanj (pongamia) seeds, sal seeds, wild honey, mango, and tamarind. These NTFPs are collected during the summer season. Around ten million people in Odisha collect NTFPs such as tendu leaves, mahua flowers, tree-borne oil seeds, siali and sal leaves.

Odisha is the third largest producer of kendu leaves in the country after Madhya Pradesh and Chhatisgarh. The production of kendu leaves in Odisha is about 5,00,000 quintals per annum. Kendu leaves produced in the state find national as well as international demand because of their uniqueness. According to the chief conservator of forests in Odisha, around 80% of kendu leaves of the state coming from 17 out of 21 districts is processed. Processing involves drying, graded sorting, binding, and depositing after plucking of leaves. The remaining 20% of kendu leaves of the state, coming from Koraput, Malkangiri, Mabarangpur, Rayagada, and Kalahandi, is of inferior quality and unprocessed (Sinha, 2020). Kendu leaf offers employment opportunities to millions of poor and landless people. More than eight lakh workers in 21 districts out of 30 in Odisha collect kendu leaves. Then, 20, 000 binders and 17, 000 seasonal workers are employed. "Most importantly", Mohanty (2014, p. 15) notes, "kendu leaves provide employment in the lean period of summer, when the opportunity for wage earning is minimal." Hence, Kendu Leaf Development Fund was set up in 2014. Even though the demand for kendu leaf has fallen in recent years, kendu leaf trade has continuously registered profits.

Other than kendu leaf, mahua flower and seed, sal seed, siali leaf, tamarind, and bamboo are most important MFP items. Tribal people collect around 25, 000 quintals of mahua flower every year. They use mahua flower to prepare alcohol for their own consumption. They also use the flower to prepare cake, jam and other food items after drying it. Mahua seed and sal seed are used for oil extraction. Sal tree is widely seen in Odisha. Coming to dependence of families in Odisha's tribal areas on major

MFP items, highest number of families (around 12 lakhs) are dependent on mahua (flower and seed) followed by tamarind (around nine lakhs), kendu leaf (around eight lakhs), and siali leaf (around eight lakhs).

MFP is a critical source of livelihood for the tribal people. It is the backbone for their survival. Since MFP is collected and not cultivated, the process does not require any capital investment. It demands labour and time on the part of tribal people. "Hence, the economic value of MFPs is the value of labour time involved in searching, plucking, weeding or otherwise collecting from the forest and carrying the same either to their homes or to the market" (Thakur & Thakur, 2009, p. 448). MFP forms the basis for subsistence as well as cash income for the forest dependent communities. Tribal people derive a major portion of their food, fruit, medicine, and other consumption items from the MFP. They get cash income through sale of MFP. According to the Ministry of Tribal Affairs estimate, tribal people derive 20 - 40% of their annual income from MFP.

MFP provides subsistence during the lean seasons to the tribal communities. "Some families also store a good quantity of produce for personal consumption throughout the year" (Senapati, 2020). Thus, MFP has social and economic significance for the tribal population. It has been rightly observed that "MFP starts with the word 'Minor' but is a major source of livelihood for tribals who belong to the poorest of the poor section of society" (Tribal Co-operative Marketing Development Federation of India Limited [TRIFED], 2020). Hence, MFP as the basis of tribal livelihood can be strengthened with government support. In fact, Government of India admits that "if NTFP activity is strengthened, tribal people can become prosperous in their own habitat, in the shortest time span, with moderate investment by the Government" (TRIFED Pradhan Mantri Van Dhan Yojana, 2020).

Furthermore, it is important to see the gender aspect of MFP. MFP collection and sale is mostly done by tribal women. In the context of Odisha, studies indicate that out of ten MFP collectors, eight are women (Vasundhara, 2020). Kendu leaf plucking is entirely done by women. Thus, the activity is a tool for economic independence and empowerment of women in the tribal areas. Government of India acknowledges this fact: "the gathering of NTFP from the forests and the primary processing of NTFP at homes is done by women folk. Strengthening NTFP is a sure way to women's empowerment in tribal areas" (TRIFED Pradhan Mantri Van Dhan Yojana, 2020).

MFP items are seasonal in nature. The period of March to June is crucial for the collection of MFP. In this regard, there are some variations within the set of MFP. For instance, it is a process of three and a half months for kendu leaf. Bush cutting is done in the month of February. The leaf growth phase takes place over a period of one and a half months from March to mid-April. The activity of plucking starts around mid-April followed by other activities up to pre-marketing till mid-May. For mahua flower, the three-month period from March to May is crucial.

MFP and the State Policy

Over the years, several institutional interventions have been made by the state to deal with NTFP. With the nationalization of kendu leaf trade in 1972, the Forest Department was given the responsibility for collection and processing of kendu leaves in Odisha. And, Odisha Forest Development Corporation Limited (OFDC) was given the responsibility of marketing kendu leaves handed over to it by the Forest Department. OFDC was entrusted with the charge of dealing in kendu leaves, sal seeds, and bamboo. OFDC is the first state-owned forest development corporation in India. In the following year, a separate department for kendu leaf organization was created under the headship of the Chief Conservator of Forests.

In 1973, Tribal Development Cooperative Corporation of Odisha Limited (TDCC) was set up as the apex cooperative body at the state level. It replaced the earlier Forest Produce Cooperative Marketing Society. TDCC functions under the Scheduled tribe and Scheduled Class development department of the Government of Odisha. It facilitates the marketing of tribal produce. The chief objective of TDCC is to purchase surplus agricultural produce and MFP at fair and reasonable prices. TDCC was granted lease of MFP in 19 forest divisions of the state in 1991. In order to dispose of the items procured, TDCC has tie-up arrangements with several national and state level organizations. Most well-known of these organizations is Tribal Cooperative Marketing Development Federation of India (TRIFED). TRIFED was set up in 1987 as a national-level apex organization under the Multi-State Cooperative Societies Act, 1984. It is currently placed under the Ministry of Tribal Affairs, Government of India. Organizations dealing with MFP are members of TRIFED. Studies (Das, 1996) point out the consistent failure of the TDCC to provide the declared price to the primary collectors.

In addition to OFDC and TDCC in the state, there are organizations such as Odisha Rural Development and

Marketing Agency Society (ORMAS) and Large Size Multi-Purpose Societies (LAMPS). ORMAS was established in 1991 under the Department of Panchayat Raj to assist in the field of marketing of rural products. LAMPS were set up in 1977 on the basis of the recommendations of the Bawa Committee. Some LAMPS were attached to OFDC or TDCC, rest of them were operating independently. Each society, catering to a population of 10, 000 - 20, 000, was supposed to market produce of the tribal people. Many existing Primary Agricultural Cooperative Societies (PACS) were converted into LAMPS and new LAMPS were created in several areas. Most of the LAMPS are no longer operative.

At the national level, Government of India launched the *Pradhan Mantri Van Dhan Yojana* as NTFP-led tribal development scheme last year. It seeks to set up 50,000 *van dhan vikas kendras* (VDVKs) in the tribal areas to ensure the availability of primary processing and value addition. It would create additional income for tribal communities through establishment of VDVKs as common facility centers where minor forest produce could be collected and value added. As per the policy concept note, each VKDK was supposed to have ten tribal self-help groups (SHGs). Each tribal SHG was required to have up to thirty members. About eleven states were supposed to set up twenty one demonstrative units from their VDVKs by December 2019. However, the scheme of VDVKs is at a preliminary stage currently. Most of the VDVKs are yet to be established. For instance, out of the 156 VDVKs proposed for Odisha, only one VDVK at Kuchinda in Sambalpur district is functional. The few established VDVKs focus on capacity building and training of tribal people.

The Forest Rights Act (FRA) and the Panchayat Extension to Scheduled Areas (PESA) Act are two major interventions of the Central Government with regard to the rights of the forest dependent communities over the MFP. The FRA includes all non-timber forest produce of plant origin such as bamboo, brush woods, stumps, cane, tussar, cocoons, honey, wax, lac, kendu leaves, medicinal plants and herbs, roots, and tubers under the NTFP. Further, the FRA empowers the *Gram Sabha* (village council) with the right of ownership, access to collect, use and dispose of MFP traditionally collected within or outside village boundaries (Section 3[c]). Similarly, the PESA Act asks the state legislatures to ensure that Panchayats at the appropriate level and the Gram Sabhas are empowered with the ownership of MFA. The overall implementation of the FRA in the state of Odisha so far is unsatisfactory.

Procurement and sale of MFP is governed by the state government policy adopted in 2000. The policy authorizes Gram Panchayats to regulate the purchase, procurement and trade of NTFPs. These NTFPs include 68 MFP items. This policy was adopted to ensure that primary gatherers receive fair price for the NTFP. So, trading in NTFP can be undertaken only after the registration with the Gram Panchayat concerned. A notification of 2001 brought to an end the earlier practice of price fixation by a committee at the state level. It introduced a system of price fixation at the district level. Now, the district collector is empowered to fix the minimum support price (MSP) for all the NTFP items. The system involves participation of the Panchayat, TRIFED, and OFDC. The district collector has to consult district forest officer (DFO), district Panchayat officer, district welfare officer, and representatives of TRIFED, OFDC and Women and Child Development Department. Accordingly, the Panchayat Raj Department notification of 2002 states that the Gram Panchayat shall have the power to regulate procurement and trading of minor forest produce whether produced in Government land and forest area within the limits of the village concerned or collected from reserve forests and brought in the village. Further, in case of a forest area where *Vana Sanrakshyana Samiti* (Forest Protection Committee) has been formed, the Gram Panchayat shall give priority to such Samiti and its members in the matter of collection and trading of minor forest produce (Odisha Forest Development Corporation [OFDC], 2020).

Lockdown and MFP

From the discussion so far, a few points become clear. First, the process of MFP collection and sale is seasonal in nature. Hence, the beginning and the culmination of the process needs to converge with the seasonal boundaries. Second, fixation of MSP for the various MFP items is significant along with their collection and sale. This step is essential to ensure fair price and justice for the marginalized sections of people involved in the MFP-related activities. Third, the concerned state agencies are supposed to take timely decisions so that livelihood of the tribal people does not get disrupted. Other than MFP that is seasonal in nature, work under the Mahatma Gandhi National Rural Employment Act (MGNREGA) and distribution of essential items under the public distribution system (PDS) and pro-poor schemes are the important bases of livelihood of these poor sections of population since there is low productivity of agriculture. With this, let us now turn to lockdown and its effects on the tribal economy.

The first phase of the lockdown began in the country on March 25, 2020 for three weeks. In the battle

against Coronavirus, Odisha has many firsts to its credit in the country. Odisha became the first state in India to announce a lockdown and extend its tenure to contain the spread of the COVID-19 pandemic. Based on its past experience of dealing with cyclonic storms, Odisha declared the Coronavirus attack a 'state disaster' on March 13 in view of growing spread of COVID-19 in India and in most other countries across the world. The first case of COVID-19 in Odisha was reported on March 15, 2020. Subsequently, the Government of Odisha decided to initiate a state level lockdown from March 23, 2020. As the first phase of national lockdown was coming to an end on April 14, Odisha was first to extend the lockdown till April 30. While extending the lockdown, Odisha Chief Minister, Naveen Patnaik made it clear that he was choosing 'saving people's lives' over 'keeping the economy buzzing'. On April 14, the Prime Minister, Narendra Modi, announced the second phase of nationwide lockdown from April 15 - May 3.

Let us now examine the effect of the lockdown on the tribal economy. The disruptive impact of COVID-19 on the tribal economy is because of the period of lockdown coinciding with the harvesting season for MFP collectors. In the first phase of the nationwide lockdown, there was complete restriction on MFP-related activities. As the selling period for several MFP items is from March to June, a major concern emerged that the lockdown would result in loss of livelihood for the families of forest dwellers. This can be seen in different ways. First, tribal people could not collect the MFP as villages put barricades at the entry points of their villages as per the lockdown guidelines restricting forest access. Hence, low collection of MFP was reported. Traders, who had paid MFP gatherers in advance, resented lack of supplies. Second, for those gatherers who had collected MFP early, lack of communication facilities like transport was the bottleneck. Third, the weekly *haat* (market), the place for trading of MFP, was shut down. Tribal gatherers could not find buyers. Thus, the gatherers could not sell even though they had collected and stored MFP. "We have our early collection of mahua flowers ready, but there are no buyers", said one MFP collector, Sarbeswar Mohant (Senapati, 2020). Fourth, due to lockdown guidelines, no nodal agency at state or national level came forward to reach out to the tribal people. At this juncture, it was crucial to facilitate trading of MFP and cash availability to the gatherers through direct bank transfer (DBT). The hard cash earned by trading MFP is "critical for their (tribal people's) sustenance during the monsoon season when employments dry up" (Barik, 2020). In such a situation, the major concern was 'distress sale' of MFP by tribal gatherers due to exploitation of unscrupulous market forces.

This caused a huge outcry from the civil society. Civil society activists demanded that the government should procure the MFP at the MSP and ensure immediate payment after procurement of MFP from the primary gatherers (Mitra, 2020). TRIFED acknowledged these valid concerns and urged the Ministry of Tribal Affairs, Government of India on March 30, 2020 to declare the existing 1,108 VDVKs as procurement centers for MFP. The TRIFED proposal stated that although VDVKs were set up for skill upgradation of tribal communities, they should procure MFP collected by the forest-dependent communities. In the early first week of April, a TRIFED letter to the state and union territory governments and state level nodal agencies emphasized that measures should be taken to protect the tribal gatherers. Subsequently, TDCC directed traders to purchase MFP from tribal people. Nothing substantial came out of this, though. In fact, VDVKs were not in a position to meet the needs of procurement of MFP at such a short notice.

The first phase of lockdown impacted two other strong bases of the tribal economy as well. There was complete restriction on the MGNREGA related work. The MGNREGA, in spite of its major limitations, provides an opportunity to the poor and landless to work with dignity. In this context, it is alarming to note that there is a relatively lower budget allocation to the MGNREGA by the Central Government this year. While the allocation was Rs. 71, 000 crores last year, it is Rs. 61, 500 crores for 2020- 21. During this lockdown phase, the priority for the state government was delivery of essential food items under the PDS in the tribal areas. In this regard, the government machinery worked on a war footing. However, because of the remoteness and hilly terrain, several tribal villages encountered major difficulties. For instance, even in the last part of April, it was reported that "hundreds of tribal families in remote Swabhiman Anchal of Odisha's Malkangiri district are left out from the food security and other pro-poor government schemes" (Das, 2020).

A major policy decision of the Odisha government on MFP came only towards the end of the first phase of the lockdown. On April 13, the state government allowed collection of MFP by maintaining social distance. New lockdown guidelines, released by the Central Government on April 15, stated that agriculture and horticulture related activities and the MGNREGA related work would be fully functional after April 20. Then, the Union Ministry of Home Affairs, exercising its powers under the Disaster Management Act, 2005, allowed collection, harvesting and processing of MFP by Scheduled Tribes and other forest dwellers. However, the instructions remained silent about procurement of MFP under MSP. The Central

Government launched the MSP for MFP scheme in the financial year 2013- 14 to provide a fair and equitable price for the MFP through MSP and, thus, improve the financial condition of forest dwelling communities. "While the scheme was started with a sum of Rs. 967.28 crore as Central Government share and Rs. 249.50 crore as the states' share in 2013, over the years, the funds have continuously dwindled along with its utilization" (Kukreti, 2018). However, during this period the money allocated for "Mechanism for Marketing of MFP through MSP" has gone up.

The Union Home Ministry's order on MFP came when the MFP season was almost getting over. Thus, tribal collectors of MFP incurred losses. Further, concerns emerge because of the poor utilization of the central grants for MFP procurement under the MSP scheme by the state of Odisha. As per the estimates of the Tribal Ministry up to the financial year 2018-19, Odisha is one of the states that failed to utilize the grant for procurement of MFP. Out of sixteen states, only Rajasthan and Chhatisgarh were able to utilize more than 60 per cent. With regard to the MGNREGA, even though work began after April 20, the reverse migration to the tribal villages appeared as a severe challenge. The challenge is to provide gainful employment to marginal workers upon their arrival from other parts of the country. The state government has decided to scale up employment generation for the returning workers. The results are yet to be seen.

Conclusions

To sum up the discussion, COVID-19 and the subsequent lockdown have had a major impact on Odisha's fragile tribal economy characterized by marginal farming, landlessness, poverty, and food insecurity. In the context of low productivity in agriculture, collection and sale of MFP acquires significance as a source of supplementary income for the livelihood of tribal people. The income amounting to more than Rs. 3000 per family during the period of three to four months, from March to May or June, caters to the needs of tribal people up to wintertime since work is not available during the rainy season. Lockdown, coinciding with the peak season of MFP, has severely affected the livelihood aspect of the tribal people and other forest dependent communities in the remote areas. Also, the lockdown has adversely affected work under the MGNREGA and delivery of welfare schemes of the government to households. Return of migrant workers lately has put further pressure on the delicate tribal economy.

As the future seems uncertain and grim, a few positive developments are worth mentioning. State governments have started procurement of MFP under MSP to protect the tribal people from the exploitation of private traders. Toward the end of April, Odisha government requested the Centre to revise MSP of 16 out of 49 identified MFPs and include five new MFP items. And, Ministry of Tribal Affairs, Govt of India revised MSP for 49 items of forest produce as per the guideline issued on May 1, 2020, under the centrally sponsored scheme entitled "Mechanism for marketing of MFP through MSP and development of value chain of MFP". Under this scheme, TDCC as the state nodal agency has to ensure that primary gatherers are not selling MFP below the revised MSP. TRIFED has created an online monitoring dashboard called 'Van Dhan Monit Dashboard' for reporting the activities undertaken at the state level for procurement of MFP. The question as to what further can be done now arises. The current exceptional situation serves as a reminder that the strong connect between the tribal people and forest needs to be urgently acknowledged and respected in the policy circles. Celebration of the Earth Day on April 22 amid lockdown further provided an opportunity to have deep introspection about tribal rights over forest and forest produce.

Competing Interest Statement

The author has declared that no competing interest exists.

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ORIGINAL ARTICLE

A Critical Metaphor Analysis on Malaysia's Gazetted Metaphors amid the Movement Control Order: A COVID-19 Episode

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ABSTRACT

The turbulent times of the Coronavirus crisis is a world-changing episode that keeps every single adult on the planet pondering not only on the silhouette of the new black but also on the mushrooming metaphors. As a linguistic representation emerging upon a shift in word or phrase usage at the unexpected context of occurrence, the metaphor thereby causes semantic tension. Nevertheless, the gazetted metaphors in the mainstream English newspapers amid the nationwide Movement Control Order (MCO) in Malaysia is distinctive. Implementing the Pragglejaz's Metaphor Identification Procedure, this study attempts to highlight and reveal its figurative meaning. In order to yield a comprehensive elucidation of these conceptual expressions; the analytical framework of this study constitutes a combination of the linguistic, cognitive, and pragmatic standards to rationalize these metaphors. The data of this study is analysed via a three-stepped Critical Metaphor Analysis that comprises metaphor identification, metaphor interpretation, and metaphor explanation.

Keywords: Coronavirus crisis, Malaysia, Movement Control Order, Metaphor Identification Procedure, Critical Metaphor Analysis, metaphor identification, metaphor interpretation, metaphor explanation, COVID-19.

Introduction

Background of the Study

The classic metaphorical streak of William Shakespeare; from Julius Caesar; "*beware the ides of March*" had made a mark in Malaysian history in March 2020; denoting a phase of tragedy. The month took off with the collapse of the people-chosen government led by the then oldest-serving Prime Minister in the world, Tun. Dr. Mahathir Mohammad who also coined the national ideal 'Vision 2020' almost three decades ago with the dream of a utopic nation. In about a fortnight, following the 'Sheraton Move', at the end of the country's most intense political crisis, which had steered the comeback of the previously overthrown government, the deadly COVID-19 outbreak in Malaysia took root as the numbers of positive- cases amplified sharply, paving the path to the nationwide Movement Control Order (MCO).

Initially the Malaysian Government had only issued the Movement Control Order, effective 18 to 31 March 2020 but was later extended; every two weeks. This partial lockdown geared a series of precautionary measures to curb further outbreaks of coronavirus cases in the country, including shutting down of all government and private premises except for those involved in "essential services" and some sectors with government permission, as well as travel bans on all foreigners entering Malaysia and on Malaysians leaving the country. The 'essential services' include, amongst others, banking services, e-commerce, electricity and water services, food supply and preparation services, transportation (air/land/sea), and telecommunication services. As for Malaysians stranded overseas, they were allowed to

return, on condition that that they undergo medical examinations upon their arrival and subject themselves to a 14-day quarantine.

Since all government and private sites have been ordered to close and cease operations temporarily, no public gatherings, including religious meetings, recreational activities and social gatherings, were permitted throughout this period, calling out to postponement and cancellation of pre-scheduled events. In the same vein, a new lifestyle and standard operating procedure was a requisite as Malaysians kept abreast in witnessing the eradication of "the-rona" virus. Malaysians had sort to embrace the new normal, which entailed caring, praying, working, studying, celebrating, and even mourning virtually, from the comfort of ones' homes.

As a consequence of this deepening crisis, the population at large was bound to suffer the highest risk of unemployment and precarity, besides unprecedented challenges; even to the extent of indelible imprints. Moreover, in many homes, issues related to the domestic violence and its chief source, deteriorating mental health were on a rise. Trapped in the house, the helpless Malaysians had to rely much on the government policies, security support, and stimulus packages. This in turn has become the defining issue of the freshly monarchy-elected eighth Prime Minister of Malaysia, while the Malaysian medical force had outdone the first-world countries to emerge, as the world's best in healthcare, especially in having stymied the number of COVID-19 cases and related deaths during the third phase of the MCO.

Fascinatingly, the episode of the Coronavirus crisis in Malaysia has been viewed in light of an array of metaphorical lexemes. Although metaphors generally lurk in our language, thoughts, and assessments of people and situations, yet this pandemic has headed an outburst of new lexemes that were gazetted on the mainstream newspapers. In relation to the previously mentioned, Lakoff (1986) and Gibbs (1994) have regarded the identification of metaphor as a matter of finding indirect meaning. Therefore, when someone says *online is the new black,* and his or her utterance does not apply to something black but to a trend, the word *black* has been utilised indirectly to convey a sense that differs from its straightforward application. This concept of metaphors, according to Semino (2008, p.1), is the dealing with "the phenomenon whereby we talk about something in terms of something else" which is highly valued.

On the other hand, Steen (2007) proposes that "the metaphorical meaning may be found frequently enough for it to need description as a conventionalised meaning of the term". In the case of *cabin fever*, its conventionalised meaning has in fact added to the Macmillan Advanced Learner's Dictionary based on a corpus research. The use is analysed as styling "the impatient or bored feeling that you get when you have not been outside for a long time". The shifting of metaphor from its time-honoured position of novel and deviant language use, to the conventional and the regular is deemed as an eye-catching transformation in the 38 years of linguistic metaphor research.

Despite the indirectness criterion being a decent opening to the finding of metaphors in language as observed in the studies of Lakoff (1993) and Gibbs (1994), and which was further linked to the notion of incongruity; as read in the works of Cameron (2003), Charteris-Black (2004), and Steen (2007), it is not sufficient. The reason being, it is too broad – as metaphors are also based on salient distinctions and contrast between the two semantic or conceptual domains present in the expression; at the same time – too narrow to capture all linguistic forms of expression of the metaphor. (Steen, 2007). However, the idea of cross-domain mapping which has become customary in cognitive linguistics brought new hope; even if ensuing conceptual analysis is demanded to uncover the intended meaning of such metaphorical mappings.

Brimful with the aforementioned hurdles, the identification of metaphor in language and its use surges with the invention of the Metaphor Identification Procedure (MIP) that furnishes for the most frequent expression of metaphor in conceptual structure of metaphorical language (Group, 2007; Steen, 2002; Steen, 2005; Dorst *et al*., 2011). This procedure stunningly lies on a strong foundation of a decision made on the theoretical framework that has a cognitive linguistics approach to metaphor with a broad view of discourse analysis, by adopting the Lakoff and Johnson (2017) view of metaphor as a cross-domain mapping for which a model was embedded within the framework. In addition, the lexical-unit was preferred as the unit of analysis in relation to concepts and referents.

Van Dijk (2017) avowed that perhaps there is no other discursive practice besides daily conversation, which is engaged in regularly by so many people as news in the press. News texts are also dense in information and attempts to persuade readers into ways of thinking and behaving that are consistent with their values. Thus, varieties of lexico grammatical resources and rhetorical strategies have been deployed to support this objective; allowing the MIP to be transparently applied. Although there are numerous studies on metaphors during a pandemic, the specialised investigation focused on gazetted

metaphors found in the national print-media discourse of Malaysia is rare and inadequate. This paper then aims to fill in the gap by means of the Critical Metaphor Analysis put forth by Charteris-Black (2004) as a new complement to Critical Discourse Analysis, to yield corpus-based data without neglecting the rhetorical function of the metaphors.

Research Objectives

By examining the metaphorical expressions on the Coronavirus crisis, which were gazetted on the mainstream English newspapers in Malaysia amid the Movement Control Order, this paper aims to:

1. Identify the literal and metaphorical meaning of the lexical units and the domains realised.

2. Determine the metaphorical mappings of the lexical units.

3. Examine the social agency that is involved in the production of metaphors and their social role in persuasion.

Theoretical Framework

Resounding on the investigative steps of Cameron & Low (2012), Charteris-Black (2004) establishes the three analytical stages of critical metaphor analysis comprising metaphor identification, metaphor interpretation and metaphor explanation. This approach to metaphor identification has two stages: The first requires a close reading of a sample of texts with the aim of identifying candidate metaphors. The words commonly used with a metaphorical sense are then, classified as metaphorical keywords and it is possible to measure the presence of such keywords quantitatively in the corpus. The second stage is a further qualitative phase in which corpus contexts are examined to determine whether each use of a keyword is metaphoric or literal. Metaphor identification involves establishing a relationship between metaphors and the cognitive and pragmatic factors that determine them. This involves the identification of, and where feasible, conceptual keys. Conceptual metaphors is defined as "a formal statement of any idea that is hidden in the figure of speech that can be inferred from a number of metaphorical expressions and assist to resolve their semantic tension". Subsequently, the conceptual keys is noted to be "inferred from a number of conceptual metaphors and is known as a higher level metaphor that explains how several conceptual metaphors are related (Charteris-Black, 2004, p.15). Hence, conceptual metaphors and conceptual keys are abstract inferences from the metaphors provided by linguistic instantiations. The inference of conceptual metaphors from the surface linguistic metaphors can help us identify the patterns of relationship among metaphors that account for their meaning. Similarly, interrelating conceptual metaphors through the identification of conceptual keys can help to account for coherence in particular discourse. A hierarchical cognitive model of metaphor is exemplified as Figure 1 below:

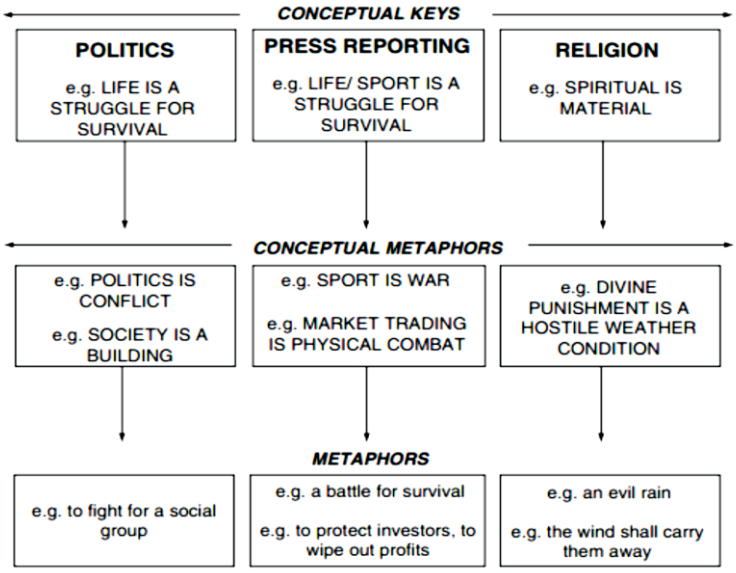

Figure 1: A Hierarchical cognitive model of Metaphor (Charteris-Black, 2004, p.15)

Explanation of metaphors involves identifying the social agency that is involved in their production and their social role in persuasion. It unearths the formation process of conceptual metaphors and conceptual keys and enables us to know about the persuasive function of metaphors. In a sense, it is identifying the discourse function of metaphors that permits us to establish their ideological and rhetorical motivation. According to Critical Metaphor Analysis (CMA), there is no deterministic motivation of metaphor use and the communicative purpose within a particular context will activate the affective potential of metaphor by exploiting individual and social resources. Individual resources can be sub-divided into three components including cognitive and affective (experiential meaning), pragmatic (contextual meaning) and linguistic (linguistic meaning) considerations. The social bases for metaphor choice are ideology (political belief), culture (group identity) and history (collective memory) (Charteris-Black, 2014). Traditional approaches to metaphor exclusively focus on linguistic considerations, while cognitive linguistic approaches exclusively concentrate on the individual experiential basis of metaphor. CMA insists that the core function of metaphor is persuasion, which is explained with reference to both social and individual considerations. The discourse model of CMA for metaphor is illustrated as Figure 2.

Methodology

Corpus Data

The news discourse is particularly a rich source of figurative language, as news contributes to building and adapting knowledge and beliefs while "metaphor is an essential part of the way we deal with novel and current events" (Kennedy, 2000, p.209). Hence, it is not startling to find a large body of research on metaphor in the news discourse. For instance; in the determination of revealing ideologies and persuasive effects in political discourse, metaphorical language in news texts (Chiang & Duann, 2007; Kitis & Milapides, 1997; Musolff, 2006; Zinken, 2003) business discourse and financial reporting (Koller, 2008; Charteris-Black, 2004) and sports reporting (Charteris-Black, 2004). Biber (2012, p.104-105) points out that "the news production process allows journalists to carefully construct their texts and make precise lexical choices", resulting in news excerpts to be a favourite corpus under study.

The corpus used in this study are the mainstream English-language news editorials in Malaysia on the Coronavirus Crisis, which are accessible virtually during the nationwide Movement Control Order (MCO); such as the *The Star*, *News Strait Times*, *The Malay Mail*, *Malaysiankini*, *Malaysian Insider*, and *The Borneo Post*. Apart from the fact, that the language of these mainstream media is formal, it is published in Standard Malaysian English.

Instrumentation

The Metaphor Identification Procedure (MIP) as the result of a six-year work by ten experienced metaphor researchers called the Pragglejaz Group aims to offer an instrument for capturing the bulk of the metaphorical expressions (Group, 2007). It is a straightforward tool for linguistic metaphor identification in natural discourse and thought to be an easy operational method for metaphor identification. This is due to the essence of the procedure, which only seeks to find a more basic sense rather than that employed as the metaphorical discourse meaning.

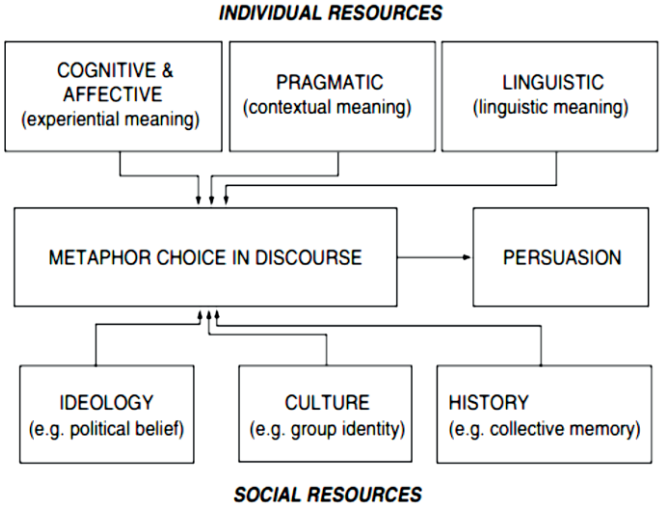

Figure 2: A Discourse Model for Metaphor (Charteris-Black, 2004, p. 248)

Since this study adopts the principle of 'one signifier, different signified', in other words, 'one wording, different meanings' (Semino, 2008, 11-12) the following four steps are taken with reference to the Metaphor Identification Procedure to unveil the expressions of the lexical metaphors in actual usage (Dorst et al., 2011, p. 25):

1. Identify the literal and metaphorical meaning of the lexical units and the domains realised.

2. Check for a more basic meaning of the lexical unit. Establish its identity if there is.

3. Examine whether the contextual meaning of the lexical unit is relative to the more basic meaning by some form of similarity. (more concrete, precise, human-oriented)

4. Determine whether the more basic meaning of the lexical unit is sufficiently distinct from the contextual meaning. If yes, mark the lexical unit as metaphorical.

Metaphorical meanings rely on a contrast between a contextual meaning and a more basic meaning; advocating that the more basic meaning has to be adequately distinct from the contextual meaning for the latter to be viewed as potentially partaking in another semantic or conceptual domain. Therefore, the subsequent practical guidelines as outlined by Dorst *et al*. (2011) were adhered to establish the metaphorical meanings of the lexical items:

1. When a lexical unit has more than one separate, numbered sense description within its grammatical category, these senses are regarded as sufficiently distinct.

2. When a lexical unit has only one numbered sense description within its grammatical category, this counts as the basic sense and any difference with the contextual sense of the item under investigation will count as sufficient distinctness.

Analysing Procedures

This research adopts the Charteris-Black's (2004) CMA approach of identification, interpretation and explanation to metaphor analysis. The ***identification stage*** comprises two steps: Step 1 involves closely examining sample texts to identify candidate metaphors, and Step 2 deals with investigating corpus contexts to determine whether a keyword is literal or metaphorical.

The ***interpretation stage*** is concerned with establishing a relationship between metaphors and the cognitive and pragmatic factors that determine whether this keyword is a conceptual metaphor or not, whereas the ***explanation stage*** deals with the identification of the social agency that is involved in the production of metaphors and their social role in persuasion.

This study; qualitative and exploratory in nature, begins with a preparation for the checklist of the lemmas. All these lexical items are synthesized further.

Not all the lemmas listed above have their items realized as metaphorically used. Either these lemmas show no existence in the corpus or they exist but only have literal meaning, namely non-metaphorical expressions. These lemmas undergo a qualitative analysis in order to isolate metaphorical expressions from non-metaphorical expressions, using the online Macmillan Dictionary (https://www.macmillan-dictionary.com/open-dictionary). The lexical units which have a more basic contemporary meaning in other contexts than the one in the present context, were identified as metaphorical expressions as suggested by Dorst et al. (2011). For example, in the first, ***fight*** has the literal meaning while in second, it is a metaphorical expression.

1. The number of people involved in the ***fight*** grew to 11 as they were calling their friends and family members to come over. After discussions with the policemen, they refused to adhere to the inspector's instruction to stay indoor during the MCO period. (Solhi, 2020)

Table 1: The List of Lexical Units

Mak Cik Kiah	Cabin Fever	Ketua Rumah	Crumble	Saving grace
Drive a Wedge between	Soft Landing	Doreamon	Flattening the Curve	Stress baking
Tabligh Cluster	Baby Steps	Mass Gathering	Wave	Lockdown exit
Invisible Forces	Break the Chain	New Black	Active Cases	Open mind
Dust settles	Social Distancing	Zoombombing	Spike	Green light
Left-field	Win	Partial Lockdown	Beat	Balik kampung
Fight	Jihad	Frontliners	Stimulus Package	Holed up

2. "The enforcement of the three phases of the Movement Control Order (MCO) so far managed to flatten the curve in the ***fight*** against COVID-19 and Malaysia is now in the recovery phase," Health Ministry director-general Datuk Dr Noor Hisham Abdullah said. (Chan & Teoh, 2020)

Results and Discussion

Linguistic Level: Metaphor Identification

Table 2 presents the explored basic meanings of the lexical metaphors and their meanings in the text. It illustrates that the literal and the metaphorical context could be the same, such as the 'consequence' taken as *crumble*. These, however, highlight different aspects of the social domain, as shown in the following discussions. Conversely, the literal and the metaphorical context could be different, such as those of 'aviation' and 'business' construed by *soft landing*, as well as 'positive' and 'negative' which is understood in place of *active,* besides 'achievement' and 'solution' by way of *win.* This "process of provoking attitudinal response in readers depends on the relationship between the literal and the metaphorical meanings involved, and on the evaluative prosody in the co-text and context". Thus, each instance needs to be read from two perspectives literally in terms of the basic contemporary meaning, and metaphorically in terms of its meaning expressed in the present text". (Liu, 2018, p.6)

Nevertheless; some of the listed expressions, which were considered as novel metaphors in the initial stages of this research as they were not exercised vastly; thereby-heightening awareness of its semantic tension, were conventionalised and added recently to the corpus-based dictionaries with the top of mind definitions due to the COVID-19's widespread effect on the world. The Macmillan Dictionary surfaced phrases like *flatten the curve* as 'to delay the speed and spread of an epidemic in order to make it more manageable' and *social distancing* as 'taking steps such as encouraging working from home, closing schools, and cancelling large events in order to slow the spread of a disease' (Macmillan, n.d.). The term *stimulus package* has appeared as a recent addition in the Cambridge Dictionary but not in the Macmillan's (Cambridge University Press, n.d.). The latter however referred to the similar fiscal policy as *helicopter money* (Macmillan, n.d.).

Cognitive Level: Metaphor Interpretation

As observed by Lakoff and Johnson (2017), this significant evidence makes it hard to refute that conceptual metaphors are real and can explain much about the way we think. A vital aspect of the Conceptual Metaphor Theory is that the conceptual domain can be viewed as any coherent organization of experience. Metaphor here is inferred as conceptualizing one domain of experience in terms of another; TARGET DOMAIN IS SOURCE DOMAIN (Lakoff, 1993, p. 207).

The concrete source domain is recognised to be more physical, directly experienced, and better known than the abstract target domain, which is less directly experienced and known. For instance, we have coherently organized knowledge about journey that we rely on in understanding recovery, for instance *road* to recovery leading to a common conceptual metaphor; RECOVERY IS A JOURNEY. The projection of elements of the source domain actually onto the target domain is shown in Table 3.

The work of Lakoff and Johnson (2017) not only defined what a metaphor is but also more importantly proposed that our conceptual structures of the world are metaphorical. In view of cognitive linguistics, a significant metaphor for the transfer of meaning is that of 'mapping' from a source to a target domain, as a representation of the structural identity between them. Here, the term 'metaphorical expression' is referred to a linguistic expression such as a word, phrase, and sentence that acts as the surface realisation of a cross-domain mapping. (Lakoff in Ortany, 1993, p. 203-206) Hence, Charteris-Black (2004) suggests that this 'mapping' which encompasses a set of relations, transferred as knowledge of a set of properties, behaviour, and interrelationships as recognised in the source domain, is meant for both 'conceptual metaphor' and 'conceptual key'.

Part of the ontological correspondences and linguistic instantiations underlying the metaphorical mapping illustrated above are demonstrated as follows. The description of these conceptual levels further enhances understanding of their role in ideology for the reason that it provides a point of access to the cognitive mechanism under the linguistic instantiations.

Economy is Movement

Volatility of the economics indicates the movement especially during this unpredicatable situation of the pandemic.

1) "We are not perfect, but we are doing the best we can to pull through this crisis together, as one nation. God willing, we will come out stronger when this crisis ends and the ***dust settles***," he said. ("Muhyiddin: 'We are not perfect, but we are doing the best we can", 2020)

Table 2: The literal and metaphorical meanings associated with the identified lexical metaphor

Expressions of Lexical Metaphor	Literal meanings		Metaphorical meanings	
	Experiential meaning	**Domain**	**Experiential meaning**	**Domain**
Soft Landing	The process by which a plane or a space vehicle comes down to the ground in a gentle and safe way.	Movement *Aviation*	A good or easy solution to a political or economic difficulty	Economy *Business*
Baby Steps	Steps of a baby	Movement	Initial stages of a new endeavour; from little to stumbling.	Health
Break the Chain	Destroy a series of things of the same type that form a connected line	War	Stop the transmission/spread	Health
Win	To achieve victory in a war, battle, or argument	War *Achievement*	Overcome	Health *Solution*
Jihad	A holy war or fight that Muslims take part in to defend Islam	War	Fasting and penance to receive a blessing	Health
Fight	To try in a very determined way to achieve something	War	To try very hard to prevent something from happening or getting worse	Health
Tabligh Cluster	Members of an Islamic missionary movement that focuses on exhorting Muslims to return to practising their religion as it was practised during the lifetime of the Islamic prophet Muhammad.	Movement	The largest group of people affected by the Covid-19 in Malaysia.	Health
Invisible Forces	Someone or something that has a powerful influence on what happened, but not visible; with or without lenses.	War	Deadly micro-organism	Health
Dust settles	Very small pieces of dirt that cover surfaces inside buildings like a powder, falls downwards through the air or water until it reaches the ground or the bottom of something.	Movement	Calm down	Economy
Wave	A line of water that rises up on the surface of a sea, lake, or river.	Movement	A period of activity that is part of a series of similar periods.	Health
Active	Operating or working in a particular area or at a particular time.	Movement *Positive*	Tending to progress	Health *Negative*
Beat	To defeat someone in a game, competition, election, or battle	War	To succeed despite a difficult situation	Health
Inject	To put a drug or another substance into your body through the skin, using a needle and a syringe.	Movement	Add or insert (humour)	Emotion
Left-Field	In baseball, the part of the outfield that is left of home plate, or the position of the player who defends this area.	Direction	Unusual	Government
Doreamon	A robotic male cat	Animation *Animal*	A feminine character	Society *Gender*
Mass Gathering	Gathering of a large quantity	Space	Gathering of more than 10 people	Society
Black	The darkest colour	Space	Trend	Society
Partial lockdown	Partial: Incomplete Lockdown: a time when large numbers of people are ordered to stay at home either most or all of the time	Movement	Under a restricted movement order	Society
Front-liners	Someone directly involved in fighting during a war	War	Medical team, security forces, and government officers working during the Covid-19 outbreak.	Health
Saving grace	A good quality that makes it possible for you to accept someone or something that is bad in all other ways	Space	Consolation or option	Society
Stress baking	*Stress*: A worried or nervous feeling that stops you relaxing *Baking*: Cooking food in an oven	Movement	Baking due to being quarantined	Society

(*Continues*)

Table 2: (*Continued*)

Expressions of Lexical Metaphor	Literal meanings		Metaphorical meanings	
	Experiential meaning	**Domain**	**Experiential meaning**	**Domain**
Lockdown exit	An occasion when people stop being involved in a lockdown.	Movement	Lifting the restricted movement order	Society
Green light	A signal that gives traffic permission to move forward	Movement	Approval	Society
Hole up	If you holed up somewhere, you stay there, especially because you are hiding.	Space	Staying at home due to the nationwide movement control order.	Health
Crumble	To be broken into very small pieces	War *Consequence*	To stop being effective	Economy *Consequence*

Table 3: The Metaphorical Mappings of Road to Recovery

DOMAIN	Animation	Direction	Movement	Space	War
Economy			✓		✓
Emotion			✓		
Government		✓			
Health			✓	✓	✓
Society	✓		✓	✓	

2) The government may introduce a "***soft landing***" approach when removing the movement control order (MCO), says the Health Ministry. (Kaos, 2020)

Economy is War

The competitive characteristics of the economy clearly shouts out WAR. Due to the Coronavirus crisis, the economic landscape is reckoned shaky and is depicted in the sentence below.

3) The currency system as is today will ***crumble*** in the aftermath anyway. (Lim, 2020)

Emotion is Movement

Movements or actions are representation of emotions and vice versa.

4) "Avoid nagging your husband," another poster said, attempting to ***inject*** humour by using a voice similar to the anime character Doraemon – a blue robot cat popular across Asia. ("Outrage over Women Affairs Ministry's 'sexist' MCO advice", 2020)

Government is Direction

'Left field', which indicate defence is a terminology adapted from the domain of WAR and used metaphorically as 'unusual' in the social context.

5) Former law minister Datuk Seri Azalina Othman Said today lambasted the Women, Family and Community Development Ministry (KPWKM) after it imparted some rather ***left-field*** advice to women, especially wives and mothers working from home, which it posted on its Facebook page yesterday, earning the ire of many. (Palansamy, 2020)

Health is Movement

The elements of health is considered as MOVEMENT (Kövecses, 2010, pp. 18-23) as it affects everything, from circulation to digestion to metabolism to immunity. Also health or illness begins with movements in society. In this case, the individuals who were tested positive for Coronavirus in Malaysia upon attending a religious gathering at the Sri Petaling Mosque were referred to as the tablighs or tabligh cluster.

6) The Sri Petaling ***tabligh cluster*** makes up most of COVID-19 cases in the country, with Dr Noor Hisham previously saying that five "generations" of positive cases had been linked to the gathering at the end of February and beginning of March this year. (Bedi, 2020)

Health is Space

Space is vital to health and makes way for both; good physical and mental health.

7) "Many of the students have been ***holed up*** at their universities for the past four weeks. There's no cluster detected among the students so far, and we will be able to screen them before they are sent home," he said. (Tan & Kaos, 2020)

Health is War

Many slots in the schema of WAR, such as break, win, fight, forces, front liners, beat, crumbles, combats, are found mapped onto the slots in the schema *of health*.

8) The MCO has been extended twice, with the latest extension set to end on April 28, as the nation

combats the outbreak of COVID-19 cases, which to date has infected 4,530 people and taken the lives of 73 people. (Chin, 2020)

In the month of Ramadhan, Muslim's fasting month, the '*jihad*' refers to a struggle within oneself against sin. Giving up the activities that one usually indulges in by staying at home is seen here as a sign of repentance.

9) Describing the effort to break the chain of the COVID-19 infection as a great sacrifice ***jihad*** by all Malaysians, he said everybody has been undergoing a tough period, which tested one's patience and strength. ("PM: Malaysians' sacrifices in fighting COVID-19 produce results", 2020)

Society is Animation

In a different view, a female politician had attempted to inject humour by portraying the Japanese anime character, Doraemon – a blue robot male cat as having a feminine tone and urged the wives at home to imitate its voice while speaking to their husbands to reduce domestic violence during this MCO period. A puzzled Twitter user in fact responded, "How did we go from preventing baby dumping, fighting domestic violence to some sad variant of the Obedient Wives Club?" (Yin, 2020).

10) In a subsequent poster on ways to educate one's spouse on doing household chores, to presumably avoid quarrelling, wives are advised to adopt a "***Doraemon-like***" tone and giggle coyly as opposed to "nagging". (Tan, 2020)

Society is Movement

Green light indicates safety and permission to move or act.

11) A total of 952 couples in Kedah who have been given the ***green light*** to get married during the movement control order (MCO) are allowed to do so at the District Religious Offices with minimal attendance. ("Green light for 952 Kedah couples to marry during MCO", 2020)

Society is Space

Space is created for what seems important and needs priority.

12) Home workouts are a ***saving grace*** for active people affected by the closure of gyms. (New Strait Times, 24 April 2020)

Socio-Cultural Analysis: Metaphor Explanation

The Critical Metaphor Analysis proposes that the amalgamation of both individual and social resources facilitate the achievement of the persuasive function of metaphor in a specific discourse. The articles in the Malaysian newspapers; for the most part were composed by local journalists. Therefore, the typical Malaysian ideology, group identity and collective memory are observed to be the main components for the social resource, which clearly influence the choice of metaphors.

A contemplation on the metaphors identified and interpreted earlier in this study elevates the current issues revolving around the economic, health, political, and social crisis amidst the global pandemic in Malaysia. As the loss of revenue and fear of retrenchment, have begun to haunt the citizens, the new government brawls to strike a balance between prioritizing the national economy and the public health, simultaneously scuffling to sustain their position and power, notwithstanding the opposition's condemnation over the decisions being made. The problem however lies in a few who are reluctant to cooperate and are ignorant of this life-threatening contagion while roaming around freely, without realising that they might pass on to others or get infected instead. The front liners then face the heightened number of cases; to either treat or arrest. Mindful of not risking the future; the authorities are unsurprisingly hesitant or rather careful in lifting the Movement Control Order as there are still active cases in the community. Contrariwise, the 'stay at home' regime has escalated domestic violence in the nation; prompting the government to show the way out, which in turn stirred chaos on gender inequality due to the unwarranted response given by a newly elected minister. On one end; the thousands of university students; held up in their campus residence look forward to the exodus of returning home during the fasting month of Ramadhan, while on the other mass gathering is forbidden; to point of cancelling weddings and restraining funerals of more than ten.

As for the individual resource, the division of the government and public makes the language in the news articles intense and magnifies the readers' interest. These linguistic instantiations then efficaciously dramatize the antagonism between various sectors and domains, thus accentuates the harshness of competition during this testing time of the pandemic. Meanwhile, it also augments morale within a group and heartens the members to strive against a mutual rival, the Coronavirus. These bellicose scenarios embellish the trials that establishments at home encounter hinting at a game of survival. In this facet, metaphor serves as a rhetorical device for the language

in these news features. The recurrent adoption of metaphor can actually construct the cognitive model of safety, hygiene, and awareness in the mind of these readers, thus arousing their emotions and more attention to the development in the country from the pragmatic perspective.

Conclusion

Media is no exception when the manner we present abstract and complex ideas is suffused with metaphors. Executing the Pragglejaz's Metaphor Identification Procedure, this research explores the literal and metaphorical meaning of the metaphorical expressions gazetted on the English newspapers in Malaysia amid the Movement Control Order, enforced in the effort to break the chain transmission of the COVID-19 in the country and further determines the metaphorical mappings of the lexical units by identifying the domains realised. This study then examines the social agency that is involved in the production of metaphors and their social role in persuasion. In order to yield a comprehensive elucidation of these conceptual expressions; the analytical framework adopted constitutes a combination of the linguistic, cognitive, and pragmatic standards to rationalize these metaphors. The data is then analysed via a three-stepped Critical Metaphor Analysis that comprises metaphor identification, metaphor interpretation, and metaphor explanation, indicating that far from being mere rhetorical accompaniments, metaphors have profound influences on how we conceptualize and act with respect to important societal issues.

The findings reveal that the metaphors show frequent occurrences in the economy, health, and social discourse in the English newspapers in Malaysia, which is an expert journalists-to-non-expert readers' interaction media. The distinctness of the metaphors and issues featured during the pandemic is signalled via the 10 metaphorical mappings plotted in this research namely economy is movement, economy is war, emotion is movement, government is direction, health is movement, health is space, health is war, society is animation, society is movement, and society is space. Nevertheless, for a more comprehensive study of these metaphors, it is vital to capture all of the instances of the lemmas identified in the media texts as well as the lexemes by reading the concordance lines and performing a quantitative analysis.

Competing Interests Statement

The authors have declared that no competing interest exists.

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Impact of COVID-19 lockdown on the Dietary Pattern and Physical Activity of People

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ABSTRACT

World Health Organization (WHO) has declared Corona virus disease 2019 (COVID-19) as a pandemic. The human race in the entire world is at risk of getting affected by COVID-19. India stands second in the world with a population of 1.3 billion with one third of women in their reproductive age, malnourished (Narayan, 2018). Malnutrition results in low resistance to infections. Therefore, any pandemic may affect Indian population adversely. Currently, no one in the world has been able to develop any vaccine or medicine for the treatment of COVID-19. Government of India (GOI) and AYUSH (Ayurvedic, Yoga and Naturopathy) gave very simple, home based, guidelines in simple and local languages at appropriate timings regarding immunity boosting foods, warm water intake, healthy diet, physical activity etc. to promote health. A well-structured questionnaire pertaining to diet, activity, and use of herbs before and during COVID-19 lockdown phase-1 was pre tested and then filled by 90 respondents online. Results showed a significant change ($p < 0.01$), in dietary pattern, inclusion of physical activity in daily routine and intake of immunity boosting foods like vitamin C rich lemon water, honey, turmeric milk, warm water etc.

Keywords: AYUSH, COVID-19, diet, Government of India, malnutrition, meals, pandemic, physical activity.

Introduction

Pandemic refers to geographic spread which describes a disease that affects a whole country or the entire world. World Health Organization (WHO b), 2020 has declared Corona virus disease 2019 (COVID-19) as a pandemic. The onset of infection with the first identified case was in early December, 2019. The most common symptoms of Covid-19 are fever, cough and shortness of breath. In the severe cases the symptoms may be worse with pneumonia leading to organ failure and death (WHO, 2020). Soon this virus indiscriminately caused sickness to millions of people worldwide. The outbreak was declared a Public Health Emergency of International Concern on 30 January 2020. The present situation is a medical emergency. The human race in the entire world is at risk of getting affected by COVID-19. The data from various countries shows that this virus may infect people of all ages. However, older people and already sick (may be due to declining immune system) and people with pre-existing medical conditions like diabetes, hypertension, cardiovascular disease, asthma appear to be vulnerable. As of March 2020, cases were reported in at least 140 countries (WHO, 2020a). Currently, no one in the world has developed any vaccine or medicine for the treatment of COVID-19. The public health infrastructure of nations is expected to be short of equipment, staff, and other resources, if preventive measures are not enforced at the earliest. The COVID-19 situation may be grimmer in developing countries with large number of populations, poverty, unemployment, poor sanitation, malnutrition, and lack of medical facilities. In India the worst hit people are the poor and marginalized.

Data from state health departments show a total 1,24,525 confirmed cases with 69,140 active infections and 51,666 recoveries country-wide with a total death toll of 3,720 (The Hindu, 2020).

Among developing countries in the world, India is the largest and educationally, economically, and technologically the fastest growing. At the same time, India stands second in the world with a population of 1.3 billion. According to Population Census 2011 there are nearly 104 million elderly persons in India. India stands second and shares a considerable Global diabetes burden with an estimated 77 million diabetics in the country (Ramya, 2019). As reported by 'India: Health of the Nation's States' by Ministry of Health and Family Welfare (MOHFW), Government of India (GOI), there is increase in the non-communicable diseases (NCDs) from 30% of the total disease burden- 'Disability-Adjusted Life Years' (DALYs) in 1990 to 55% in 2016. A fast epidemiological transition is observed with a shift in disease burden. One in six people with diabetes in the world is from India. In India one third of women in their reproductive age are malnourished (Narayan, 2018) and it bears the burden of more than one-third of world's malnourished children (Smith, 2015). The inter-relationship between malnutrition, infection and immunity is a complex phenomenon. Therefore, any pandemic may affect the Indian population adversely.

Human body has an inbuilt immune system. The immune system in human body protect it against 'nonself' and elimination of all such substances or organisms.The immune system is expressed as cellular and humoral immunity. A compromised immune system can increase the susceptibility of infections. Malnutrition results in low resistance to infections (Melinda, 2002). Various studies have confirmed that malnutrition and infection aggravate each other (Scrimshaw, 1968). Specific trace elements and vitamin deficiencies may alter the immune state. (Keith and Jeejeebhoy, 1997) Malnutrition, lifestyle diseases like obesity, diabetes and aging can also influence the immune system. Nutrition support, healthy dietary habits, immunity boosting foods along with some exercise may improve the immunity.

There is an uregent quest to re-establish and popularize mix of traditional and novel effective strategies against COVID-19. One of the symptom of coronavirus is common cold. There is neither a cure nor any effective prevention or vaccine for common cold. There is sufficient data suggesting that any condition that affects immune system poses the risk of contracting the common cold. The body's immune system may be compromised under malnutrition, inadequate sleep, physical or psychological stress and lifestyle diseases. It is believed that vitamin C plays an important role in improving immunity and effectively preventing/treating common cold (Douglas et.al. 2004). The effective strategy to combat with COVID-19 may be inclusion of vitamin C rich foods in daily diets. A diet rich in vitamin C and antioxidants rich fresh fruits and vegetables like lemon, orange, gooseberry, grapefruit, tomatoes, papaya, broccoli etc. may help us improve immunity. (Chen et.al, 2020 and Abbasi et.al, 2019).

Majority of nations adopted lockdown to break the chain of virus transmission and observed positive results to break the pace at which the virus spread. Therefore, the only known way to prevent transmission of COVID-19 is by social distancing which can be maintained by lockdown. To announce and limit the movement of the 1.3 billion population of India was the most challenging decision by any government. To prevent the spread of COVID-19 transmission, Government of India announced a nationwide lockdown for 21 days on 24th March, 2020, followed by the next lockdown up to 3rd May, 2020. The announcement of COVID-19, lockdown phase-1 everywhere showed varied, yet similar, human behavior all over the world. The announcement was a historic decision which was never heard or seen in generations. The announcement affected all. A storm of psychological forces affected the mindset of the masses. The first outcome was panic and next was a feeling of control. Almost everybody, rich and poor, tried to exercise control over the uncertainty by purchasing and storing food, essential items, and medicines followed by panic to travel back to near and dears. Pictures of heavy rush on roads, grocery shops, bus stands, trains etc. all over India floating on social media platforms like twitter, Instagram, Facebook etc. affected the mindset further.

The fast-paced changing health scenarios in India are driven by the risk factors and exposure to vectors (Mathur, 2019). Life today is horrifically burdened with the pandemic. Prevention and health promotion by healthy diet, regular physical activity is an easier, cheaper, and a more adaptable solution in the present scenario as compared to curative or isolation services. Government of India (GOI) and Ayurvedic, Yoga and Naturopathy (AYUSH) gave very simple, home based, guidelines regarding immunity boosting foods, warm water intake, healthy diet, physical activity etc. extensively to general population in simple and local languages at appropriate timings. The study was planned with a hypothesis that, the uncertainty, absolute new social situation, panic buying and storage of food items, floating diet and herbal

product related information on various domains, GOI advisories etc. might have affected food choices, activity, awareness level, and mindset of people during the lockdown period.

Methodology

The study was planned by creating a survey using Google forms. A well-structured questionnaire in simple English language was framed with multiple choices, check boxes, and short answers. Questions pertaining to diet, activity, and use of herbs before and during COVID-19 lockdown phase-1 were included in the questionnaire. The critical examination of the survey questionnaire was planned and executed to check its validity and reliability. The pre-testing of the questionnaire was filled by 10 respondents (not included in the final survey) on and before 7th April, 2020. The pre-test of the survey was conducted to pin point problem areas, ensure respondents interpretation correctly, and reduce measurement error. The amendments in the questionnaire were made as suggested/realized. The questionnaire was shared with known personal and professional contacts of authors via email, Whatsapp and Facebook. A total of 90 respondents filled the final survey questionnaire between 11th April and 25th April, 2020. For any query or inappropriate information by respondents, telephone calling was used. Data was analyzed by using appropriate statistical tools.

Results and Discussion

Table 1 shows the demographic characteristics of the respondents enrolled in the online survey during COVID-19 lockdown phase-1. The combined results of online and telephonic survey were responded by 45.6% males and 54.4% females. Maximum respondents, i.e., 30%, was in the age group of 21–30 years; 21.1% respondents were above the age of 60 years whereas 14.4% respondents were in the age group of 51–60 years. The percentage of the respondents in the age group of 31–40 years and 41–50 years was 16.6 and 17.7, respectively. The maximum number of respondents in the age group of 21–30 years may be due to the lifestyle of youth in the 21st century as nowadays the young generation spends maximum time on technological gadgets and social media. The other reason may be a higher sensitivity level of youth and a desire to perform and contribute by all possible means at the time of crisis. The data showed that 40% respondents were educated up to graduation, 34.4% post-graduation, and 12.2% doctorate. A total of 13.3% respondents were educated in other fields including diplomas, certification courses, etc. but no respondent was under the category of secondary education. 32.2% respondents were single whereas 66.6% respondents were married. Only 1.1% respondents were under the category of divorced. 67.8% families reported that they live in a nuclear family system whereas 32.2% families live in joint family system. The family size of 58.8% respondents was under the category of four to six persons whereas 30% respondents reported a smaller family size of one to three 8.8% families were under the category of seven to

Table 1: Demographic characteristics of the respondents enrolled in survey during COVID-19 lockdown phase-1

Characteristics	Frequency	Percentage
Gender		
Male	41	45.6
Female	49	54.4
Age		
21-30	27	30.0
31-40	15	16.6
41-50	16	17.7
51-60	13	14.4
> 60	19	21.1
Education		
Secondary	-	-
Graduate	36	40.0
Post Graduate	31	34.4
Doctorate	11	12.2
Others	12	13.3
Marital Status		
Single	29	32.2
Married	60	66.6
Separated	-	-
Divorced	1	1.1
Widowed	-	-
Type of family		
Nuclear	61	67.8
Joint Family	29	32.2
Family Size		
1-3	27	30.0
4-6	53	58.8
7-8	8	8.8
>8	2	2.2
Family member more than 60 year age		
Yes	16	17.8
No	74	82.2
Bed ridden/ Critically ill family member		
Yes	3	3.3
No	87	96.6

Percentages are rounded up to nearest decimal point

eight family members and 2.2% respondents were under more than eight members in a family. The joint family system is still prevalent in India. The joint family system not only comforts youth by the presence and help of elderly at home but elderly are also cared, looked after, and feel better when connected. It is important to look after elderly and critically ill family members as a priority during lockdown. 17.8% respondents reported that they have a family member who is more than 60 years of age. As observed in type and age of COVID-19 affected persons worldwide, it appears older people are more at risk to get affected by this virus.

Table 2 shows the percent distribution of respondents based on country, community, region, and income. The online survey gave the scope of enrolling people worldwide. As known contacts from email and social media were used for filling up survey forms to ensure proper information and clear any doubts telephonically, it was observed that 92.2% respondents were from India and 7.7 were from abroad (Figure 1).

Majority of the respondents i.e., 88.8% belonged to the urban community whereas 11.1% respondents belonged to the rural community. In India, maximum respondents (74.4%) were from Punjab, may be because of the recent contacts and as the surveyor belonged to Punjab, followed by 8.9% respondents from Maharashtra, 5.5% from Bihar, 2.2% from Kerala and 1.1% from Gujarat. 53.3% respondents were employed and 46.6% respondents were unemployed. For type of livelihood 18.8% respondents reported private job, 10% government job, 7.7% farming, 3.3% running an industry, 2.2% running a shop as their occupation. 35.5% respondents were under the category of home maker and 12.2% were under the category of student, 6.6% were retired and 3.3 pursuing other occupations. In India, almost all the homes have women as home makers.

Majority of the respondents i.e., 30% were in the monthly income group of 51-75,000/-, 26.6% in the income group of 76-100000/-, 21.1% in the income group of >1,00,000/- 12.2% in the age group of 26-50000/- and 10% in the income group of 10-25000/- Indian rupees.

The data in table 3 demonstrates the dietary practices of respondents before and during COVID-19 lockdown phase-1. Zarocostas, 2020 reported that there is a need for people to attain and apply health information, and adapt their behavior at the soonest due to rapid and unprecedented development of the coronavirus disease into a pandemic. 62.2% respondents used to eat non-vegetarian food before the lockdown but during the COVID-19 lockdown phase-1 only 20% respondents consumed non-vegetarian food. Change in the choice of food was observed. 37.7% respondents were not consuming non-vegetarian food before the lockdown. The percentage of respondents not consuming non-vegetarian foods significantly increased (80%, $p<0.001$) during phase one of the lockdown. The association between non-vegetarian food consumption and COVID-19 lockdown phase-1 was statistically significant ($p<0.001$). This may be due to the unavailability of fresh cut meats and closure of butchery shops or personal choice. The lower consumption of non-vegetarian food by the non-vegetarians during the lockdown period may also be due to the floating speculations, myths, and facts on social media about the start of the COVID-19 outbreak from

Table 2: Percent distribution of respondents based on country, community, region, and income

Variable	Frequency	Percentage
Country		
India	83	92.2
Abroad	7	7.7
Community		
Rural	10	11.1
Urban	80	88.8
Region		
Punjab	67	74.4
Maharashtra	8	8.8
Gujarat	1	1.1
Kerala	2	2.2
Bihar	5	5.5
Occupation		
Employed	48	53.3
Unemployed	42	46.6
Type of occupation		
Home maker	32	35.5
Private job	17	18.8
Govt. Job	9	10.0
Industry	3	3.3
Shop	2	2.2
Farming	7	7.7
Retired	6	6.6
Student	11	12.2
Others	3	3.3
Family income		
10-25000	9	10.0
26-50000	11	12.2
51-75000	27	30.0
76-100000	24	26.6
>100000	19	21.1

Percentages are rounded up near decimal point

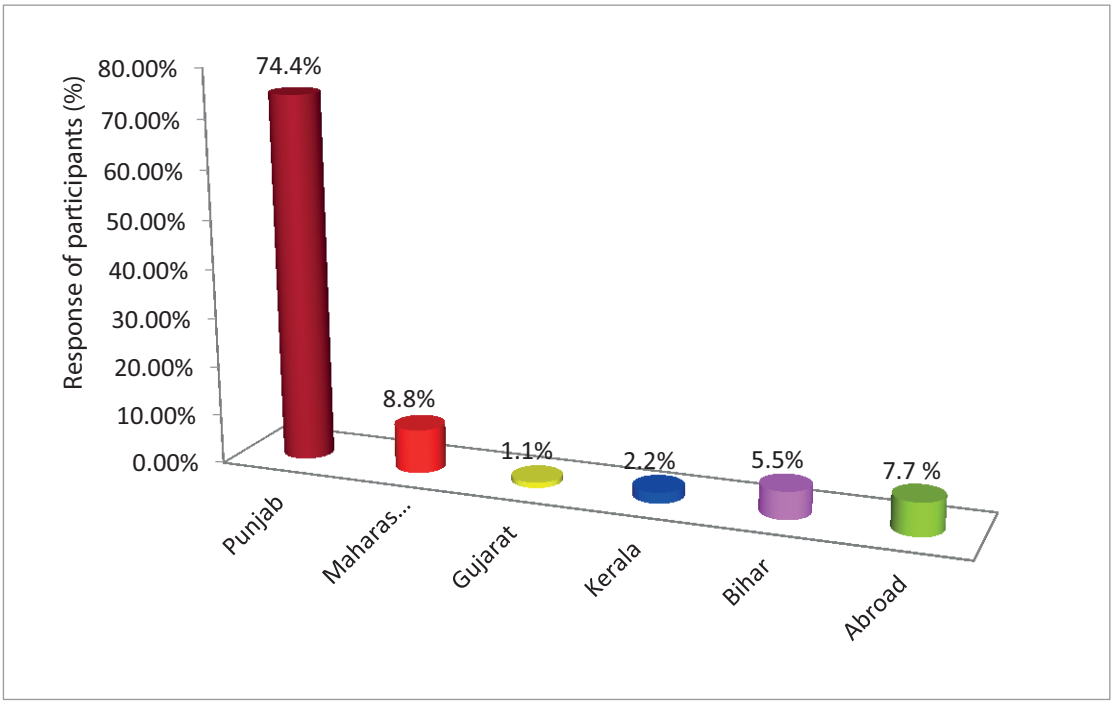

Figure 1: Response of people from different states of India and abroad during survey for COVID-19 lockdown phase-1

an animal market in Wuhan, China. WHO, 2003 suggested that the world is living dangerously because either it has little choice or because it is making wrong choices. Data illustrate a significant decline ($p<0.1$) in the percentage of respondents who used to order home delivery of food as per desire/requirement from 57.7% to 4.4% during the lock down period. 42.2% respondents were not placing orders for home delivery before the COVID-19 lockdown phase-1. During the COVID-19 lockdown phase-1 period 95.5% respondents did not order food from home delivery services. Therefore, on line home delivery food orders were observed to have decreased during COVID-19 lockdown phase-I and their association was significant ($p<0.1$) at 10%. This data clearly shows the understanding of respondents about the concept of lock down and the significance of social distancing. The people who ordered food from outside may be old or due to absolute requirement. A healthy diet along with physical activity are the two most important and efficient tools to prevent disease and promote health.

Data gathered showed that there is a significant statistical ($p < 0.001$) relationship between salad intake and COVID-19 lockdown phase-1. The daily salad intake was reported by 74.4% respondents before lockdown which increased to 93.3% during lockdown. There was a significant increase ($p < 0.001$) in the percentage of respondents for daily intake of salads during lockdown period. 25.5% people were not eating salad on daily basis before the lockdown. This percentage significantly decreased ($p<0.001$) to 6.6 during lockdown.

Honey is considered as natural food with medicinal value. The daily intake of honey was reported by 7.7% respondents before the COVID lockdown phase-1, which increased to 84.4% during this lockdown. However the change in number of respondents taking honey remained insignificant. 87.7% respondents were not consuming honey in any form before the COVID -19, lockdown phase-1 and during the lockdown period 12.2% respondents were not taking honey in their daily diets in any form.

There was a significant rise ($p < 0.1$) in the number of respondents consuming lemon water during COVID-19 lockdown phase-1. As compared to 14.4% respondents consuming lemon water daily earlier, 80% respondents reported consumption of lemon water during the lockdown period. 85.5% respondents did not consume lemon water daily before the lockdown and percentage of respondents (20%) not consuming lemon water daily decreased significantly ($p < 0.1$) during the lockdown. All the advisories, awareness messages and doctors' interviews insisted on consuming vitamin C rich foods. It is an established fact that Vitamin C boosts immunity. Lemon is easily available and used. March end in India is the start of summers; the availability of lemons is easier as compared to *Amla* (Gooseberry) at that time.

Table 3: Dietary practices and adoption of immunity boosting foods by the respondents before and during COVID-19, lock down phase-1

Variables	Before lockdown		During lockdown		Value	Associated p-value
	N	N%	N	N%		
Non-Vegetarian Food					13.6***	0.000
Yes	56	62.2	18	20.0		
No	34	37.7	72	80.0		
Ordered home delivery food					3.1**	0.08
Yes	52	57.7	4	4.4		
No	38	42.2	86	95.5		
Daily Salad intake					18.7***	0.000
Yes	67	74.4	84	93.3		
No	23	25.5	6	6.6		
Daily intake of honey					1.4 NS	0.237
Yes	7	7.7	76	84.4		
No	83	92.2	14	15.5		
Daily intake of Lemon water					3.8**	0.051
Yes	13	14.4	72	80.0		
No	77	85.5	18	20.0		
Turmeric Milk					4.8*	0.029
Yes	2	2.2	27	30.0		
No	88	97.7	63	70.0		
On any diet					38.1***	0.000
Yes	13	14.4	6	6.6		
No	77	85.5	84	93.3		
Consumption of warm water					17.9***	0.000
Yes	4	4.4	73	81.1		
No	86	95.5	17	18.8		
Daily gargling due to COVID-19					3.5**	0.060
Yes	—	—	20	22.2		
No	90	100	70	77.7		
Daily intake of honey					1.4 NS	0.237
Yes	7	7.7	76	84.4		
No	79	87.7	11	12.2		

*5% level of significance and ***1% level of significance ($p < 0.001$), **10% level of significance ($p < 0.1$)

Consuming turmeric milk is a common practice in Indian families especially on injury or sickness. Today's generation consume milk in the form of shakes and coffee etc. therefore, it was important to know how many people adapted the guidelines for consuming turmeric milk. The consumption of turmeric milk before the COVID-19 lockdown phase-1 was reported only by 2.2% respondents whereas a significant ($p < 0.001$) increase in percentage (30%) of respondents consuming turmeric milk was observed during the lockdown period. 97.7% respondents were not consuming turmeric milk before the COVID-19, lockdown phase-1 and results showed that 70% respondents did not start consuming turmeric milk during the lockdown.

Balanced diet is the key to health. Nowadays various types of dieting regimes are prevalent to control weight. Younger people, middle aged women, and men prefer to diet than do physical activity. Dieting regimes might not be catering balanced diet to the consumers which may affect their immune system gradually. To see how many of the respondents were on any kind of diet before and during the lockdown, the data was collected. Data showed that 14.4% respondents were using some kind of diet schedule before phase-1 of the lock down however only 6.6% respondents followed the dieting regime during the lockdown phase-1. 85.5% were not on any kind of diet before and 93.3% were not using dieting regimes during the lockdown phase-1.

A total of 4.4% respondents used to consume warm water before the COVID-19 lockdown phase-1 and a significant ($p<0.001$) increase was observed in the percentage (81.1%) of people consuming warm water during the lockdown phase-1. 86% respondents didn't consume warm water daily before the COVID-19 lockdown phase-1 whereas 18.8% respondents did not take warm water during this phase.

Daily gargling appears to prevent upper respiratory tract infections including COVID-19. Before the COVID-19 lockdown phase-1 no respondent used to gargle daily. The covid-19 common symptoms include fever, cough, and shortness of breath. Gargles are believed to sooth throat and help in cold, cough, and sore throat. (WHO, 2020[b]). After the lockdown phase-1 20% respondents starting gargling on daily basis. Whereas 100% respondents were not gargling before, during the lockdown phase-1 77.7% respondents were not gargling daily. A significant ($p<0.1$) increase was observed in the habit of gargling daily. The Ministry of AYUSH emphasized on using preventive measures mentioned in *Ayurveda* during the COVID-19 unprecedented spread. These include common food ingredients readily available in Indian kitchens that are helpful especially for respiratory health and to boost immunity. The commonly available and easy to adapt measures included condiments like turmeric, cumin and coriander, and garlic. Use of turmeric powder in hot milk every day, drinking warm water throughout the day is said to be useful. For physical health, The Ministry of AYUSH emphasized on practicing yogasana, *pranayam*, and meditation for at least half an hour daily (The Tribune, April, 2020). In a study by Ang, L. 2020, seven data sources for eligible traditional medicine guidelines were searched and he found a total of 28 traditional medicine guidelines (26 government-issued Chinese and two Korean guidelines) providing treatment measures for COVID-19. He suggested that there is no direct evidence on the efficacy of traditional formulae in the treatment of COVID-19; all of them require clinical verification.

The positive outcome in dietary choices may be attributed to GOI advisories on websites, radio, television, ring tones etc. and social media awareness sites and television programs. At this time maximum people would have used social media and different apps more frequently and for longer durations as compared to routine days before lock down. The fear factor, spread due to the deadly virus affecting health and life of individuals at mass level, might have motivated individuals to be empowered and preach health information. Appropriate health information from reliable sources, provided intermittently in simple words in international, national, and regional languages, initiated people to read about health foods and advisories resulting in positive outcomes, as neither a vaccine nor any treatment for COVID-19 infection has been advised worldwide.

Figure 2 depicts meal intake pattern of the respondents before and during COVID-19 lockdown phase-1.

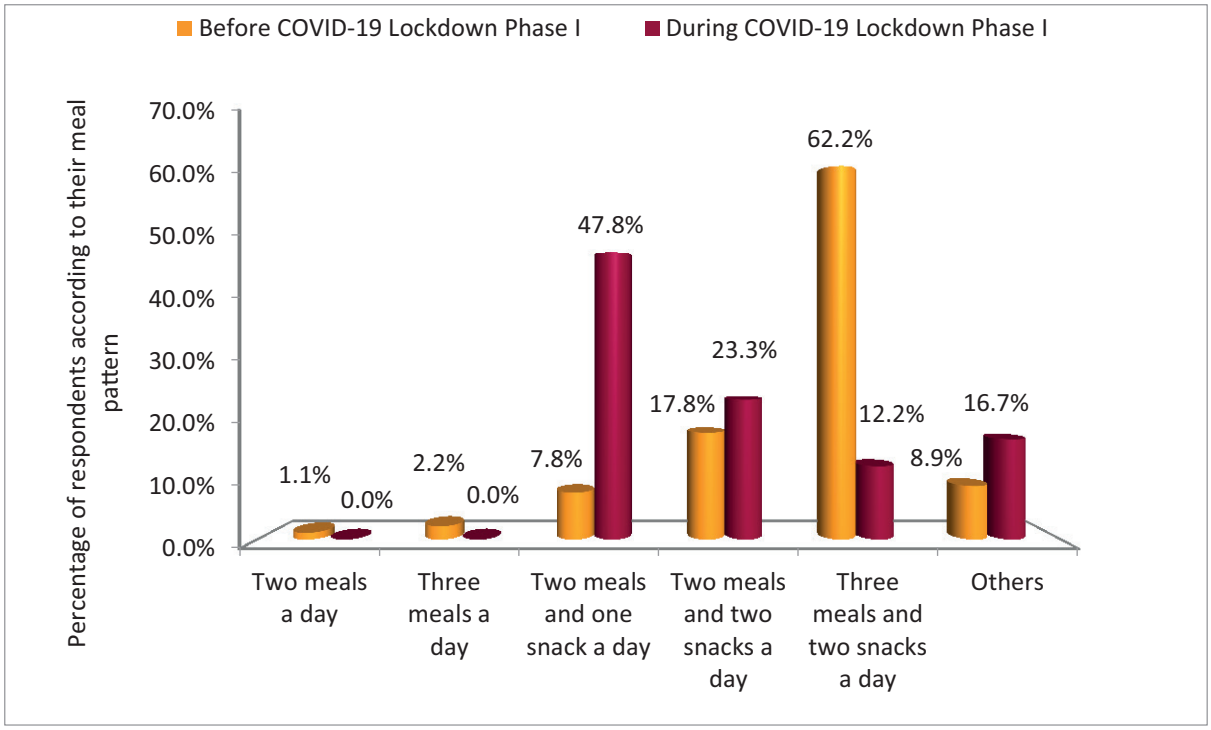

Figure 2: Meal intake pattern of the respondents before and during COVID-19, lockdown phase-1

Maximum respondents, i. e., 62.2%, used to consume three meals and two snacks a day. The percentage of respondents consuming three meals and two snacks a day decreased to 12.2% during the lockdown. While only 7.8% respondents used to consume two meals and one snack a day, during COVID-19 lockdown phase-1, 47.8% respondents started consuming two meals and one snack a day. 17.8% respondents used to consume two meals and two snacks a day before the lockdown, whereas 23.3% respondents started consuming two meals and two snacks a day during the COVID-19 lockdown phase-1. 8.9% respondents reported that they used to follow other meal patterns before the COVID-19, lockdown phase-1 and the percentage increased to 16.7% during lockdown. This increase may be attributed to weight watchers. They might have gone for various dieting experimentations during this time. The data showed that 2.2% and 1.1% respondents were consuming three meals and two meals respectively, before the COVID-19 lockdown. Under both the categories, no respondents followed these meal patterns. Change in meal patterns may be due to various reasons including initial confusion in the minds of common people regarding how the administration is going to execute this lockdown. From where would the essentials be organized? During that time, people might have decided their meal patterns, predicted lesser activity and to do things that further supported their thoughts regarding food. Further, more leisure time with families, relaxation from daily hustle- bustle and tight schedules, unavailability of domestic helps, distribution of available food wisely, not overeating etc. may be the factors effecting meal pattern during the COVID-19 lockdown phase-1. Gandhi ji promoted fasting. According to him fasting helps the body to detox, cleanse the stomach, use up body fat. This also helps in coping with any infection, if present (Mathur, 2019).

According to World Bank (2009) report, malnutrition affects the socio-economic growth of a Nation. Therefore, balanced diet, at appropriate times, and portion size is an important and easy key to remain healthy. Gandhi ji, in his book 'The Story of my Experiments with Truth (1929)', suggested that "Today I know that physical training should have as much place in the curriculum as mental training" (Mathur, 2019).

Figure 3 shows the percent distribution of respondents according to frequency of physical activity before and during the COVID-19, lockdown phase-1. Before the COVID-19 lockdown situation, only 27.7% respondents used to do physical activity daily while after the announcement of COVID-19 lockdown phase-1, 53.3% respondents started doing physical activity on daily basis. Physical inactivity is globally a public health issue. Physical inactivity is the root cause of lifestyle diseases thereby affecting the immunity of a person. 25.5% respondents were working out minimum four times a week and the number reduced to 24.4%. This fall in percentage may be due to their decision to do physical activity daily. A total of 14% respondents worked out three-times a week before the lockdown and this number also reduced to 10%; 7% respondents used to do physical activity on weekends in normal days before the lockdown was announced. 20% respondents reported that they used to do some kind of physical activity sometimes and the percentage of respondents doing physical activity sometimes decreased to 11.1%.

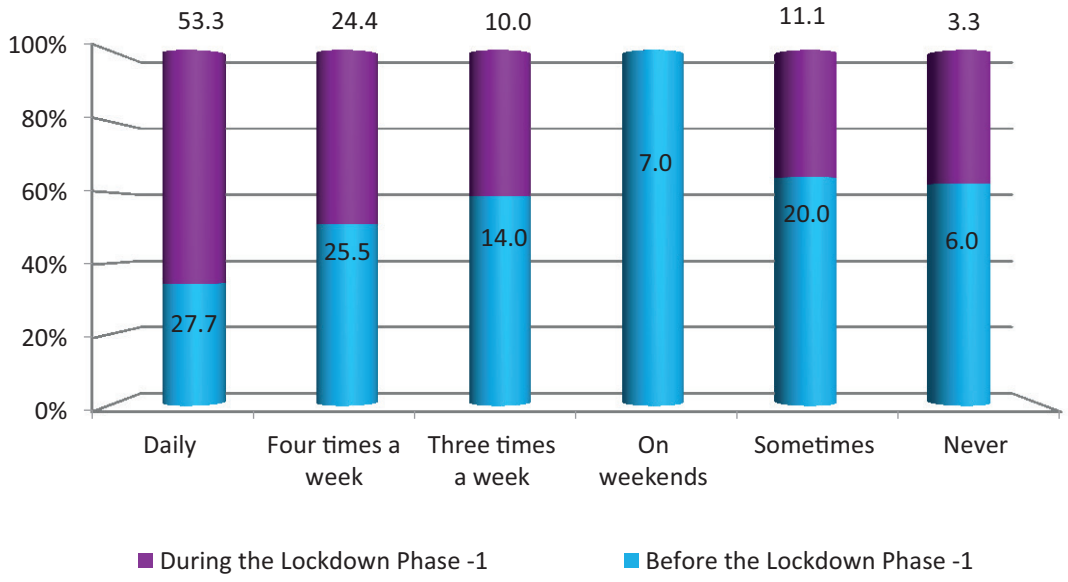

Figure 3: Percent distribution of respondents according to frequency of physical activity before and during the lockdown phase-1

Six percent respondents never did formal physical activity and the percentage of respondents under this category reduced to 3.3% during the lockdown. Fast-paced societal transition, industrialization, globalization have catered for reduced physical activity. Most of the people fall in the category of sedentary lifestyle. Mathur (2019) reported that 54.4% adult population of India is inactive. The 65.5% inactive population is from urban areas. Women are more inactive then men. WHO (2003) report shows that In India among the population aged 20+, 52.6% females and 10.2% males are inactive. Physical inactivity increases the risk of lifestyle diseases, stress, anxiety, depression etc. Therefore, it is important to be active during the COVID-19 lockdown phase-1 and maintain health (physical, mental, emotional, and social health).

Figure 4 shows the changes in the food preference of family members. 41% of the respondents reported that family members preferred simple and light food. 26% stated that family members became conscious and wiser to not waste food. 17% respondents reported demand for more variety in daily meals by the family members. 13% respondents reported that food preference and pattern remained same before and during the COVID-19, lockdown phase-1. Only 3% respondents reported any other changes in the food preference. The fear of food scarcity in coming times, closure of shops, uncertainty prevailing in the environment for the solution and duration of lockdown etc. might have motivated people to use food wisely, not waste it, and prefer simple and light food.

Whereas lesser active day schedules would have initiated creative minds to experiment and make variety in kitchens. Variety in food preferences may also be due to the together time by families in today's life. The plethora of recipes, cooking shows, advertisements and sufficient time to see those pop ups might have helped in preferring variety and experimenting with available food ingredients.

Table 4 shows the results of test statistics of physical activity before and during COVID-19 lockdown phase-1 indicating that there is a significant difference between the physical activity of respondents before and during phase one of the COVD-19 lockdown. The results are significant at 5% level of significance ($p<0.001$). The test

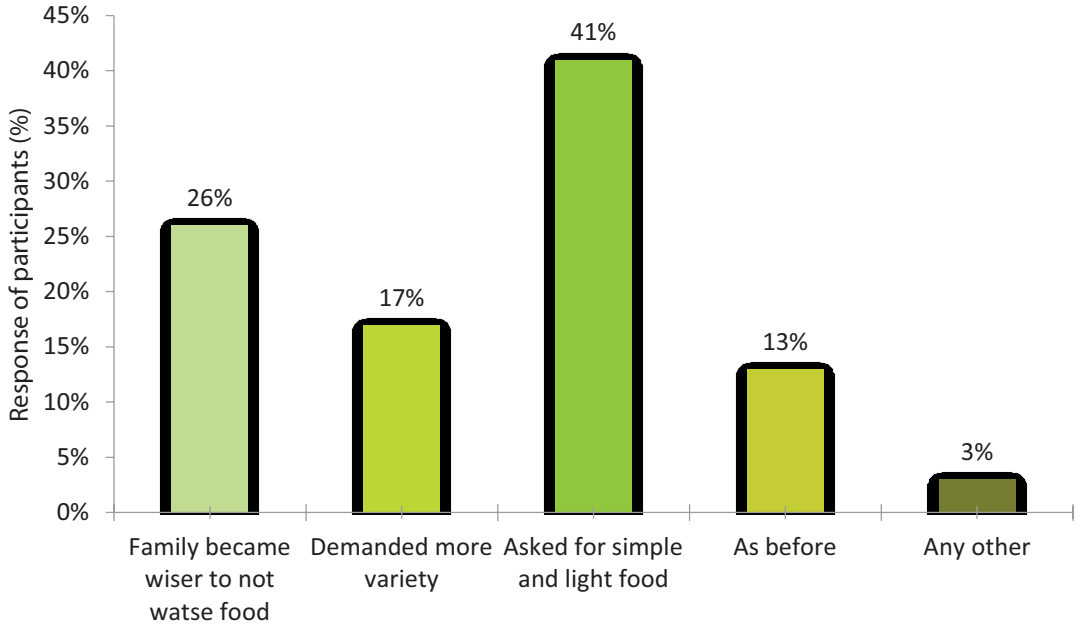

Figure 4: Preference of daily food by family members during COVID-19, lockdown phase-1

Table 4: Test statistics of Physical activity and Meal pattern before and during COVID-19, Lockdown Phase 1

Physical Activity	T-Before		T-During		t-test	p-value
	Mean	Std. Deviation	Mean	Std. Deviation		
	0.71	0.55	1.06	0.70	3.54	0.004
Meal pattern	19.9	10.1	20.0	12.01	0.005	0.997

T-Before: Physical activity and meal pattern before COVID-19, lockdown phase 1
T-During: During COVID-19, lockdown phase-1

statistics of Meal Pattern before and during COVID-19 lockdown phase-1 revealed a non-significant difference in the meal pattern of respondents before and during COVID-19 lockdown phase-1.

Conclusion

COVID-19 is a declared pandemic by World Health Organization (WHO). Till date scientists all over the world are trying whole heartedly to find a definite solution and develop a vaccine. The rapidly increasing corona crisis is a huge challenge for India with the second highest population in the world. To fight the situation, "Prevention is better than cure" is an imperative measure. One of the important appeared measures is social distancing. To save the human race, lockdown measure is announced by most of the countries all over the world bearing enormous economic, other estimated, and non-estimated overall losses. Stay home, stay safe is the only *Mantra* for guarding the human race. Simple changes in our diets and lifestyle may improve our immune system and prevent infections. The present study showed inclusion of physical activity, health foods, immunity boosting foods by the respondents in their daily routines and diets. People realized that a well-balanced diet leads to good health and stronger immune. There were many guidelines for healthy food choices and physical activity but during the COVID-19 lockdown phase-1, it was observed that people followed the guidelines issued by GOI and AYUSH religiously. Majority of respondents started consuming turmeric milk, lemon water, warm water etc. and included physical activity in their routines. A home cooked, balanced and nutritious diet, physical activity and inclusion of basic herbs in daily routines is the best and cheapest strategy for health. The study showed that Government of India's strategy to make people aware, with extensive, need based campaign, advisories, and guidelines, about easily available immunity boosting foods in household kitchens and motivate people to consume healthy diet with some kind of physical activity seem to have a very positive effect on the people of India. People of all age groups are bravely fighting against the deadly virus by staying inside, eating healthier foods, refraining from junk and fast food, adapting immunity boosting foods, trying to balance their daily diets and physical activity. WE can and WE will win.

Suggestions

The next study will be performed with questions pertaining to health index. Presently this survey is already closed. The total respondents enrolled are 90 and pre-testing was performed on 10 respondents i.e.11.11%. Howsoever, it shall be taken care of to pre-test even more number of respondents in the next research being conducted by me.

Competing Interest Statement

The author has declared that no competing interest exists.

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[1]Department of English Studies, Texas University, Dallas, USA., [2]Department of the Deputy Vice Chancellor, Texas University, Dallas, USA.

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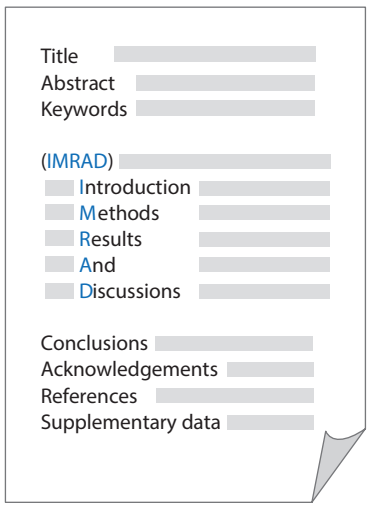

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