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TABLE OF CONTENTS

Measurement Issues for a Think Tank on National Development

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Abstract

This paper highlights a number of measurement issues in attempts to assess the impact of policy think tanks with special reference to the Centre for Strategic and Policy Studies (CSPS), Brunei Darussalam. Very little literature on this topic exists in the region and the arguments put forward represent benchmark endeavour within the country. It is hoped that the paper will provide better awareness of the work of CSPS as a think tank for national development and to point out some of the ways in which to improve the assessment of its research projects.

Keywords: *Think Tanks, Key Success Measures, Policy Impact, CSPS, Brunei Darussalam*

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[1] I am grateful to Kartini Rahman and Redhuan Rajak for completing the references.

1.0 Introduction

The late 1940s witnessed a proliferation of research institutes which distinguished themselves from universities, exclusively purposed to provide research-based policy advice for governments, NGOs and the community. Coined 'think tanks', initially to refer to a room of war strategists, Goodman (2005), for example, has described how these institutions have evolved their subject matter further into 'ideafactories' and policy-oriented think tanks which:

".. explicitly focus on governmental policies, usually for the purpose of improving those policies or creating viable alternatives" (Hart, 2008)

From (McGann and Weaver 2000, p. 6-12) and Hart (2008), we can also observe different species of think tanks: academic think tanks, government think tanks, contract research think tanks and policy advocacy think tanks.

Established on 15 June 2006, the Centre for Strategic and Policy Studies (CSPS) is a government-funded think tank set up to undertake independent and objective policy research and analysis on strategic issues concerning Brunei Darussalam. CSPS's research projects are therefore geared towards achieving the country's Long Term National Development Plan or 'Wawasan Brunei 2035', in particular focusing on economic diversification and social development.

In providing policy advice which is grounded in empirical research and pertinent data to decision makers, CSPS is expected to play an integral role in nation building. Research projects are conducted, where relevant, in partnership with government agencies, business industries, the private sector, tertiary institutions, research partners and the wider community. CSPS serves as a platform for policy-related discussions by engaging its diverse stakeholders through its conferences and seminars, roundtable forums, closed door discussions and workshops to disseminate its key research findings. It also publishes periodic journals and reports as well as conducting training for both public and private stakeholders.

In summary, the objectives of CSPS are:

- Conduct research and provide policy advice on issues of strategic importance to Brunei Darussalam and national development;
- Support decision makers with pertinent data and policy advice to make informed policy decisions;
- Provide rational and empirical, and, where needed, alternative policy advice to the

Government; and Build bridges among diverse stakeholders, including Government, business, academia and society.

Similarly, whilst the primary function of policy think tanks is to help government make informed policy choices, based on McGann (2005)'s arguments, the following roles have been attributed to think tanks:

- Playing a mediating function between the government and the public that helps builds trust and confidence in public officials;
- Serving as an informed and independent voice in policy debates;
- Identifying, articulating and evaluating current policy issues, proposals and programmes;
- Transforming ideas and emerging problems into policy issues;
- Interpreting issues, events and policies for the electronic and print media, thus facilitating public understanding of domestic and international policy issues;
- Providing a constructive forum for the exchange of ideas and information between key stakeholders in the formulation of policy process;
- Facilitating the construction of "issue networks";
- Providing a supply of personnel for the legislative and executive branches of government;
- Challenging the conventional wisdom, standard operating procedures and business as usual of bureaucrats and elected officials." (p. 3)

In addition to influencing the policy-making process, in a post-positivism era, Stone (2005) for example has argued that in our growing awareness of the contestability of knowledge, think tanks importantly act to 'edit and credibly validate information' and are therefore 'third party vetters of trust'.

Over recent years, however, think tanks have significantly suffered a decline in support and in a number of countries their existence is increasingly called into questioned. Although it is likely that the main reason for their decline is due to the global financial crisis and funding cuts[2], it is crucial to address whether think tanks have evolved to serve the purpose for which they were set up towards. It is usually the case that funding cuts become less challenging and more justifiable with any organization that has failed to achieve its raison d'etre.

Essentially, this is a matter of developing good 'Key Success Measures' (Haines, 2009) for think tanks. How do we measure the effectiveness of think tanks or more so, a particular think tank?

[2] Note: Amongst others, examples of funding cuts for think tanks include the renowned Mowat Centre- https://www.globalgovermentforum.com. See also https://cuts-international.org-indias-most-admired-think tank and https://onthinktanks.org-uploads-2017/07

"If you never establish quantifiable outcome measures of success for your vision, how will you know you have achieved it?" (ibid., p. 131)

This paper attempts to analyse a number of critical measurement issues with specific reference to the work of CSPS as an independent but government-sponsored public policy think tank. Such an exercise is the first academic attempt for the organization and it is hoped that the issues raised will not just assist in the defence of CSPS as an indispensable tool for the national development of Brunei Darussalam, but also to point out potential methods in which CSPS as a think tank should be measured. To summarize, the paper is significant in its contributions to the literature on think tanks in three ways. First, the use of CSPS as a detailed case study and how it has contributed to policy making in Brunei Darussalam, for example in economic development, energy efficiency, youth policy, and social security. Second, the study is self-reflective, done from a participant observer's point of view and it hopefully provides rich insights into how CSPS has contributed to policy formulation, impact evaluation, problem framing and identification within public policy, among others. These are examples of work by think tanks that have not been acknowledged adequately in the literature which has focused mainly on the upstream impacts of such organizations. Finally, and perhaps most important is that the paper tackles the most difficult question about the impact of think tanks - measurement issues. There is a lack of literature which directly tackles this topic as McGann and Weaver's paper (ibid) is normally deferred to without question.

2.0 What to Measure?

There are a number of approaches for measuring the effectiveness of think tanks. Profile metrics quantifying the number of research projects conducted, social media following and activity, number and downloads of publications, news coverage, number of socialization events such as conferences, forums and workshops, training provided, number of citations and research references, are seen as good KPIs for think tanks. However, these profile metrics mainly cover a think tank's output and performance, not its actual impact on outcomes, which is the crux of the key success measures. Do the outputs research findings, journals, reports, forums, talks etc. actually make an impact on policymaking?

The Global Go To Think Tank (GGTTT) by the University of Pennsylvania (McGann, 2020) is the best-known ranking source, covering more than 8000 institutions globally. Also known as 'the Think Tank of Think Tanks', rankings are put into categories such as "Top Think Tanks Worldwide", "Top Think Tanks by Region" and "Top Think Tanks by Area of Research". The

GGTT method for ranking is primarily reliant upon the ranking of nearly 2000 selected experts within the field via a multistage review and nomination process.

A more qualitative and rounded measurement tool has also been proposed by the GTTT 2020 to address the confusion between outputs and impacts and the metrics are reproduced below in view of their usefulness:

- "Resource indicators: Ability to recruit and retain leading scholars and analysts; the level, quality and stability of financial support; proximity and access to decision-makers and other policy elites; a staff with the ability to conduct rigorous research and produce timely and incisive analysis; institutional currency; quality and reliability of networks; and key contacts in the policy academic communities and the media.

- Utilization indicators: Reputation as a "go-to" organization by media and policy elites in the country; quantity and quality of media appearances and citations, web hits, testimony before legislative and executive bodies; briefings, official appointments, consultation by officials or departments and agencies; books sold; reports distributed; references made to research and analysis in scholarly and popular publications; and attendees at conferences and seminars organized.

- Output indicators: Number and quality of policy proposals and ideas generated; publications produced (books, journal articles, policy briefs, etc.); news interviews conducted; briefings, conferences and seminars organized; and staff who are nominated to advisory and government posts.

- Impact indicators: Recommendations considered or adopted by policymakers and civil society organizations; issue network centrality; advisory role to political parties, candidates and transition teams; awards granted; publication within or citation of publications in academic journals, public testimony and the media that influences the policy debate and decision-making; listserv and website dominance; and success in challenging the conventional wisdom and standard operating procedures of bureaucrats and elected officials in the country." (ibid., p. 41)

The GGTTT2020 metrics are indeed more robust but its perception-based ranking method by experts is however, not without critique (Seiler and Wohlrabe 2010; Medizabal 2011, 2012). Challenges in measurements include not just simple gaps in quantification and tallying but the capacity of experts to assess "which among such institutions so diverse in purpose and tactics – is "top" (Clark and Roodman 2013, p. 2).

"Ideally, think tank measurements will capture both quality of work and the degree to which institutions affect policymaking or other societal processes……However, impact is difficult to attribute and measure. Quality is subjective, particularly when research is normative and shaped by ideology. Should a think tank get more points for shaping the U.S government's position on Iran or helping to reform the World Bank's lending facilities?" (ibid., p. 3).

Similarly, is the CSPS National Master Plan for a Sustainable Land Transportation System (CSPS and SQW Atkins, 2014) more impactful for national development or a mere sidelined finding that there is a need to revise social policy towards improving access to daily necessities for a sizeable proportion of low-income groups within the population?

Aside from the quality of the research findings and policy recommendations, what counts as key performance indicators worthy of inclusion also complicates the measurement of actual impact. The most obvious ways to measure the impact of a think tank, and this is favoured by third parties such as auditors, is to count how many research projects have been applied by its stakeholders, that is, how many research projects have influenced policymaking. CSPS is not without such examples here, as in the CSPS Brunei Pension and Social Security study (AIG, 2007; The World Bank, 2007), which reviewed the pension system for employees who began work after 1992 for a more sustainable pension scheme and to encourage private sector employment, hence reducing the government's fiscal burden. The study advised that the replacement income for this post-1992 group was insufficient and proposed: (i) additional social security to complement the Employee Provident Fund (TAP) to reduce the fiscal burden and to make the private sector more attractive to locals, and (ii) increase the mandatory retirement age for citizens and permanent residents from 55 to 60. Both recommendations have been applied by the Government, leading to the introduction of the Supplementary Contributory Pension (SCP) scheme and the enactment of the Retirement Age Order, 2010.

Other examples where CSPS's policy recommendations have been clearly applied by the government include the CSPS Brunei Energy Efficiency and Conservation Study: Roadmap and Policy (Tetsuya and Koh, 2011), all eight of CSPS strategies have been adopted in the government's 2014 Energy White Paper. The EEC study was the first to provide policy and regulatory advice as well as formulate a national roadmap for energy efficiency and conservation (EEC). The study found that the transportation sector accounted for half of total energy consumption in Brunei, followed by the commercial, industrial, and residential sectors with roughly equal shares. With EEC measures, the study calculated that Brunei could reduce its energy consumption by 63% by 2035. The study also led to the establishment of a National EEC Committee and the enactment of a regulatory framework.

In addition to the officially proclaimed National Youth Policy and Strategy 2020-2035 (Cheong, 2018), the CSPS Land Optimization Strategy for Industrial and Commercial Growth (Rizzo and SGS Economics and Planning, 2012) is another landmark example where its identification of eight development zones with available land mass has served as a guideline for industrial development by its stakeholder.

However, tallying the application of CSPS's findings and policy recommendations as a way of assessing a think tank's impact upon policymaking is really not as straightforward. Aside from the subjective nature of impact and quality, factors regarding the size and workload of a research project also need to be considered. Is the highly praised annual CSPS Economic Outlook or the annual CSPS Strategy and Policy Journal, which uses mainly secondary data and literature review, more deserving, or the low profile CSPS study on the Reasons for the Commission of Theft (Cheong and Rahman, 2021), which involved more than 200 hours of intensive one to one in-depth interviews with 112 theft convicts in prison cells?

Further and as noted by Shlozberg (2015), stakeholders do not always attribute policy decisions directly to a think tank, even if this were the case, and "credit for policy is usually ascribed to the government of the day". Moreover, the influence of the think tank's work may only have impacted upon a part of the policy because "government policymaking is often a synthesis of multiple sources" (ibid.).

Policy recommendations may be directly taken onboard by the government, leading to the implementation of new, or refinement of existing, policies, laws and regulations. It must be noted that policy relevance or importance (as opposed to simply quantifying the number of tangible policies/decisions or impact created) is crucial in assessing the value of policy analysis and advice provided by think tanks like CSPS. In reality, though, actual policy adoption and implementation cannot be directly measured or quantified as it is mostly beyond the control of CSPS, and it would typically happen with a delay (i.e. the implementation of a policy recommendation may occur several years after the completion of a project). Furthermore, only some parts of our recommendations may be incorporated in policy making and it is indeed often not overtly acknowledged, even if our findings or recommendations have been taken into account.

Still, "(if)…the point of Mowat research is to influence government policy, the ultimate outcome in our case would be the implementation of policy we have advocated." (ibid.)

In arguing the above, renowned Canadian public policy think tank the Mowat Centre has usefully recommended three ways to identify actual policy making. Tracking through government document citations, reports and press releases, and official access (for example instances where think tanks provide briefings and attend government meetings), the impact upon policymaking can be identified:

- By looking for direct attributions: think tank work is directly cited by government or stakeholders.
- By looking for 'one-step-removed' citations: think tank work that was cited was incorporated into final policy.
- By looking for policies reflecting think tank work: whilst the reflection may have been coincidental, there may be additional evidence to reasonably claim that it was the think tank's influence to a degree (ibid.)

However, even if the measurement process were to adopt a wider approach such as the tallying of not just direct attributions but one step removed and policy similarity and reflection, there will still be quite a confusion as to which research projects can be counted and the weightage accorded to each. CSPS has often been asked for example by its stakeholder's auditors to list the titles of the government policies that it has formulated in order to justify performance. The expectation here is for CSPS to cite actual government policies that it has formulated, but this is not a strictly relevant, nor a realistic, angle of measurement.

It is important to emphasize that our work covers all 5 stages of the cyclical policy process - the stages as established within the discipline of public policy, as shown in the diagram below.

Figure 1:
The Policy Process[3]:

[3] PennState College of Earth and Mineral Sciences. Stages of Public Policy. Retrieved from https://www.e-education.psu.edu/eme803/node/516

In trying to influence public policy and as policy analysis and policy advice are the main mission of CSPS, the core work of CSPS, like most other think tanks, focusses on i) Problem Identification, ii) Policy Formulation, iii) Policy Evaluation, depending on the nature and needs of the policy issue to be addressed, the adoption and implementation of our findings and recommendations being the intended outcome of our efforts.

It must be noted that policy relevance or importance (as opposed to simply quantifying the number of tangible policies/decisions or impact adopted and implemented) is crucial in assessing the value of policy analysis and advice provided for think tanks like CSPS.

Policy Formulation consists of the recommendations once the policy problem and attendant solutions have been identified. This is the part that our auditors typically request for a tally. It is an important and most obvious output but not the only relevant and possible output for a think tank. Depending on the type and nature of the problem to be addressed, typically, think tanks will conduct research by collecting either primary or secondary literature and data, analyse the information and then formulate the recommendations with reference to the organization's objectives, for example the overall purpose for solving the problem. In CSPS's context, policy recommendations would be framed to achieve Wawasan 2035 goals.

Policies formulated by CSPS and adopted by the government, such as the previously cited Brunei Pensions and Social Security study (AIG, 2007; The World Bank, 2007), the EEC study (Tetsuya and Koh, 2011) and the National Youth Policy and Strategy (Cheong, 2018) are good examples. Adoption of the policy is an important formalisation representing a governing entity's commitment to enforcing the policy's tenets.

Much like policy formulation, Policy Implementation is also an iterative process and may involve many stakeholders across agencies and governing bodies. Think tanks may also be involved at this stage due to their role in advising how the intended policy is to be adopted. The National Youth Policy and Strategy (Cheong, 2018) and a number of Strategic Plans for government agencies 2018-19 in which a whole of nation approach and systems thinking perspective (Haines, 2009), is usually proposed by CSPS as implementation plans. Implementation of a policy will be dependent not just on the actors who are responsible for enforcing it, but also on how well it was crafted during the problem identification and policy formulation stages, which is why think tanks are an indispensable part of national development.

Policy Evaluation is also an important perspective-building exercise to assess successes and failures of the policy that will inform the development of subsequent policies. Evaluation can be either quantitative or qualitative in nature, addressing intended and unintended social, economic, and environmental outcomes as a result of the policy's implementation.

The Youth Development Index 2018 Report 'YDI 2018' (Rizzo et al., 2018) for example, measures the extent to which Wawasan strategies have been achieved in terms of youth development. The ASEAN SME Policy Index (Koh, 2018) is a classic problem evaluation project in which CSPS took stock of SME policies and evaluated these in terms of effectiveness and challenges. The study found that Brunei SMEs have relatively developed infrastructures such as a robust legal and regulatory framework, access to finance, company registration and e-Government. The gaps requiring government intervention included the need for relevant environmental policies, social enterprise growth and inclusive SMEs, and improving public-private consultations.

CSPS's Economic Cluster Development Study (Rizzo, 2016) is another policy evaluation exercise to prioritize 10 economic clusters based on strategic feasibility and economic attractiveness. In order to do so, the study conducted extensive evaluation of existing industrial policies relating to each economic cluster. The evaluation found that the most common challenges faced by the economic clusters are lack of a skilled workforce, mismatch between training received and industry needs, small domestic market size and difficulty in penetrating foreign markets, weak regulatory framework and business climate, limited innovation and research, and the need for specialized infrastructure (e.g. testing laboratories for agri-food, digital infrastructure for ICT).

Finally, the Problem Identification stage, which is actually often a starting point in the policy process. This is an often neglected stage that needs more recognition in terms of the impact that it can play on policy making. For some think tanks, problem identification may be the only focus of their work. In order to achieve successful public policy, the problem must be clearly defined and understood at an appropriate scale. What is the problem or issue? Is it serious enough to warrant policy attention (usually involving research measurement)? What are the issues involved? Very often, our stakeholders would request CSPS to conduct a study or advise on a policy problem that is actually quite vague or consisting of a multitude of issues. Agenda setting, refining the research questions and scoping out the research parameters then becomes a very valuable contribution from a think tank in solving policy questions.

Think tanks see themselves as 'initiators' of a policy agenda at times, as our work can also be intended to draw attention to a policy problem rather than just solving an issue. For example, a key value of our Study of Unemployment Issues among Registered Job Seekers in Brunei Darussalam (Cheong and Lawrey, 2009) is not just its recommendations on how to solve the problem but that it drew attention to the fact that unemployment had become a serious policy issue in the days when this was not apparent.

The Cross-Border Expenditure of Bruneians in Miri (Cheong et al., 2015) for example started off as an enquiry at the request of our stakeholder as to why Bruneians were spending so much money in the Malaysian border town of Miri. CSPS surveyed a total of 594 groups of Bruneian tourists in terms of their holiday attitudes, levels and types of spending. The survey findings show that Bruneians spent on average B$ 205.16 per group per trip, which corresponded to a total of B$ 61.3 million a year[4].

The study found that although shopping for necessities in Miri is significant among low-income Bruneians, a large number of Bruneians also visited Miri as a preferred leisure and entertainment venue. This study emphasized therefore the need to improve the competitiveness of the domestic retail sector for more variety and price competitiveness of goods and services, encourage inward cross-border shopping and tourism, improve domestic leisure and entertainment offerings to encourage Bruneians to spend their leisure time in Brunei, increase the livability of the Belait District, enhance customs enforcement, review fiscal measures, and revise social policy towards improving access to necessities for low-income groups.

The Cross-Border Study therefore provided both quantifiable and qualitative data that was lacking to guide policymakers. It was not just a simple issue of cheaper shopping but a number of important issues requiring policy attention. So, the problem identification step also usually leads to the identification of new issues that may require government action - setting the agenda for policy attention. The main recommendations of the study have been taken up by the stakeholders, who then commissioned CSPS to formulate a White Paper Reducing Cross - Border Expenditure by Making Brunei the Preferred Holiday Destination for All by 2020 (Cheong and Rahman, 2015).

In recent years, CSPS has set up a Brunei Futures Initiative unit and the main part of our work is Horizon Scanning, essentially focusing on the problem identification stage. Scanning for significant trends and emerging issues helps us to evaluate potential future situations strategically in order to reduce ‘surprises’, identify threats and opportunities and to increase the room for policy adjustment. As Lum (2016) has argued, horizon scanning is essential so that our strategies and policies are ‘future proofed’ and a key to anticipatory government is: “…searching for small ripples that might one day become grand waves, tsunamis”. Amongst others, a key CSPS deliverable here is the production of a set of Deck cards – the Futures Deck (Cheong et al., 2016; CSPS, 2017) which consists of 47 trends and emerging issues facing Brunei and the region which was prioritized over a course of intensive research and stakeholder

[4] The estimated expenditure represents 1.4% of Brunei’s household final consumption expenditure- HFCE in 2013. Using data from similar studies, the same percentage can be estimated at 3.1% for Singaporeans in Malaysia, 1.5% for Mexicans in the USA, 1.8% for Canadians in the USA, 2.1% for Hong Kong in Guangdong, and 2.6% for Swiss in neighbour countries. Therefore, the level of spending by Bruneians is Miri is not really high to warrant policy attention.

consultations over a year. Interestingly, one of the prioritized trend is called ‘Outbreaks of Infectious Diseases’, three years before we were unexpectedly impacted by the Covid Pandemic.

CSPS has also conducted quite a few studies mainly on just measuring a policy issue such as the YDI 2018 (Rizzo et al., ibid), which are again focused on problem identification mainly. These findings are very important for policy making but are not intended to directly result in a policy or legislation etc. What is the level of Youth Development in Brunei compared to our global counterparts? Are the levels satisfactory or bad enough for policy intervention? Using national and international metrics, a nationwide survey covering 2,403 youths was conducted, which included a needs analysis that measured the level of youth development covering 8 domains: self-development; leisure activities; health; self-potential; community integration; social issues; political integration; and employment opportunity. The findings showed that our youth development level did not meet the well-developed or ‘Very Good’ quartile, with an average Youth Development Index (YDI) score of 65.1 or ‘Good’ only. To meet Wawasan Brunei 2035 targets of high standards of living, the government should aim to achieve an overall YDI of ‘Very Good’ (score of 75 and above). The YDI findings in fact consequently formed the basis of Brunei’s new National Youth Policy and Strategy for 2020 to 2035, as jointly formulated by CSPS, whereby key strategic areas that were emphasized for youth development include employment opportunities, education, health, environment, ICT, globalization, full and effective participation, and leisure activities. Reflecting the implications of the YDI 2018 findings, a new Youth Vision was formulated - “Values-driven world-class youth, who are future-ready agents of change for national development, rooted in inclusivity”, with four new policy goals, four core strategies and 16 policy initiatives to drive its implementation (Cheong, 2018).

Therefore, there are different contexts and stages in the policy process from which a think tank can contribute in terms of policy advice and an awareness of the stages is crucial to assessing policy impact. It is important that the contributions of a think tank towards policy making are not assessed mainly in terms of obvious policy formulations and solutions, but also in terms of research projects that manage to raise policy attention and assist in agenda setting, at the problem identification level.

3.0 Conclusion

A couple of years back, one of our CSPS stakeholders advised us that a think tank is ‘a nice to have’. By contrast, we strongly see an independent think tank as a necessity, for all the reasons that McGann has clearly articulated. We hope to have shown that there are indeed many research projects leading to very important policies or parts of policies that CSPS has contributed to and which serve our national development objectives. A number of the research projects, however, may not be recognized as impacting policy making due to a lack of understanding of several complex measurement issues that this paper has set out to clarify and elaborate upon (Shlozberg, 2015). What is required now is a better justification in defence of CSPS as a think tank for national development, and this involves the search for viable key success measures and indicators. The key success measures must be synchronized with the strategic objectives of the organization. In keeping with social change, CSPS is still in the midst of developing a new set of strategic objectives and therefore this is a timely topic to address so that a fresh perspective can be adopted when it comes to the formulation of key success measures for the think tank.

In summary, quantitative metrics are required for key success measures but a number of measurement issues need to be taken into account:

- Key success measures must be holistic, quantifying not just obvious outputs such as number of research projects, publications, forums and talks, but actual impact on policy making must be prioritized.
- Assessing impact on policy making is a qualitative exercise and as such, it is prone to subjectivity, although we must strive to quantify this area as empirically as possible.
- Tallying impact on policy making is not a simple matter and we must:
    - Recognize not just direct attributions of policy application, but also indirect influences of a think tank's work.
    - Consider the amount of work and effort invested into the research projects.
    - Recognize that impact does not just result at the policy formulation and policy implementation stage, but also at the policy identification stage.

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Monitoring Economic Activity during the COVID-19 Pandemic: The Need for High-Frequency Indicators

Koh Wee Chian

Abstract

The COVID-19 pandemic is posing unique challenges to policymakers around the world, necessitating informed decision making in short time frames. Having the right data at the right time is of paramount importance. Near real-time and high-frequency data are more effective in surveillance and forecasting when economic activity is changing rapidly, compared to traditional and official data sources which are typically published with considerable lag. The private sector holds invaluable high-frequency data and academia produces insightful research that can help policymakers to better gauge the impact of the pandemic across economic sectors. Governments should collaborate with the private sector and academia to create a multi-sectoral dashboard to support real-time impact assessment, which will also be crucial in effectively responding to future crises.

Keywords: *COVID-19, pandemic, real-time data, high-frequency indicators, nowcasting, economic impact, Brunei Darussalam*

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1.0 Introduction

The COVID-19 pandemic has caused disruptions to economic activity at unprecedented speed and scale. The global economy experienced one of the deepest recessions in 2020, contracting by 3.5 percent, its depth only surpassed by the two World Wars and the Great Depression over the past century (World Bank, 2021). Governments around the world have implemented lockdown measures to "flatten the curve", that is, to slow down the spread of the SARS-CoV-2 virus so as to not overwhelm the healthcare system. Whilst imposing lockdowns is necessary to save lives, particularly in the absence of effective vaccines and therapeutics in 2020, they have inevitably disrupted livelihoods. Production has been hampered as factories are forced to shut down due to government-enforced measures or temporarily idled due to labour shortages, while consumption has declined due to falling incomes and fear of contracting the virus led to consumers spending less time outside of the home and thus reducing spending on non-essential items.

The pandemic poses unique challenges to policymakers around the world, necessitating informed decision making in short time frames. Having the right data at the right time is of paramount importance. Policymakers need to understand the health impact and peoples' anxieties, behaviours and expectations, as well as quantify the economic impact to design proportionate relief measures to affected firms and households. Realising the need for real-time data for disease surveillance and outbreak control, many countries have launched contact tracing applications and dashboards of health indicators. However, a similar real-time tracking of economic outcomes has been comparatively less visible, especially in emerging and developing economies.

In times of crisis, like the COVID-19 pandemic, near real-time and high-frequency data are more effective in measuring and forecasting economic activity compared to official and traditional data sources which are typically available only at a monthly or quarterly frequency. In addition, these statistics are typically reported at the national level and breakdowns by subgroups or geographies are unavailable. The private sector holds invaluable high-frequency data and academia produces insightful research that can help policymakers to better gauge the impact across economic sectors. Governments should collaborate with the private sector and academia to create a multi-sectoral dashboard based on high-frequency and more granular indicators to support real-time impact assessment, which will also be crucial in effectively responding to future crises.

The rest of the paper is organised as follows. Section 2 discusses the importance of high-frequency indicators in times of COVID-19 and outlines some key data sources and real-world applications. Section 3 illustrates the usefulness of high-frequency indicators in tracking economic activity. Section 4 discusses the use of high-frequency indicators in Brunei and provides some suggestions on developing a near real-time dashboard. Section 5 concludes.

2.0 The Need For High Frequency Indicators

Traditional or official data on economic activity, such as consumption in the national accounts and industrial production, are only available monthly or quarterly and with some considerable lag. For instance, gross domestic product (GDP) by economic activity and type of expenditure is usually released about two months after the end of the reference quarter. As a comprehensive measure of the economy, GDP statistics take time to compile. During normal times, these delays may not matter much. However, during a crisis when shocks to the economy are large, such as the COVID-19 pandemic, this luxury does not exist and traditional statistics are therefore less useful in assessing the real-time impact, which necessitates immediate policy actions. Every week of policy inaction may be costly in loss of lives and livelihoods. Social distancing measures such as lockdowns have also hampered the collection and compilation of official statistics, exacerbating the issue of timeliness. Some countries have made available early releases of key statistics (e.g. Australian Bureau of Statistics; ABS 2020). This may, however, be inadequate for real-time assessment of the economy due to the rapidly evolving situation of COVID-19, where the effects are still unfolding. As such, novel datasets with high-frequency and near real-time indicators are required for effective monitoring.

Researchers have been experimenting with new and alternative measures of economic activity based on high-frequency and more granular data, generated mainly by the private sector, to facilitate the ongoing evaluation of the pandemic. These new sources of information include daily electricity consumption (e.g. Raman and Peng, 2021; Wang et al., 2021), weekly unemployment claims (e.g. Chetty et al., 2020), satellite readings of tropospheric nitrogen dioxide densities (e.g. Demirgüç-Kunt et al., 2021; Kerr et al., 2021), night-time lights visible from space (e.g. Beyer et al., 2021; Roberts, 2021), mobility inferred from mobile phone location tracking (e.g. Chen et al., 2020; Nouvellet et al., 2021), consumer card transactions (e.g. Carvalho et al., 2021; Hacioglu-Hoke et al., 2020), air traffic (e.g. Iacus et al., 2020), restaurant bookings (e.g. MacDonald et al., 2020), accommodation reservations (e.g. Liang et al., 2021; Romano, 2021), and Internet search (e.g. Abay et al., 2020; Koh, 2021).

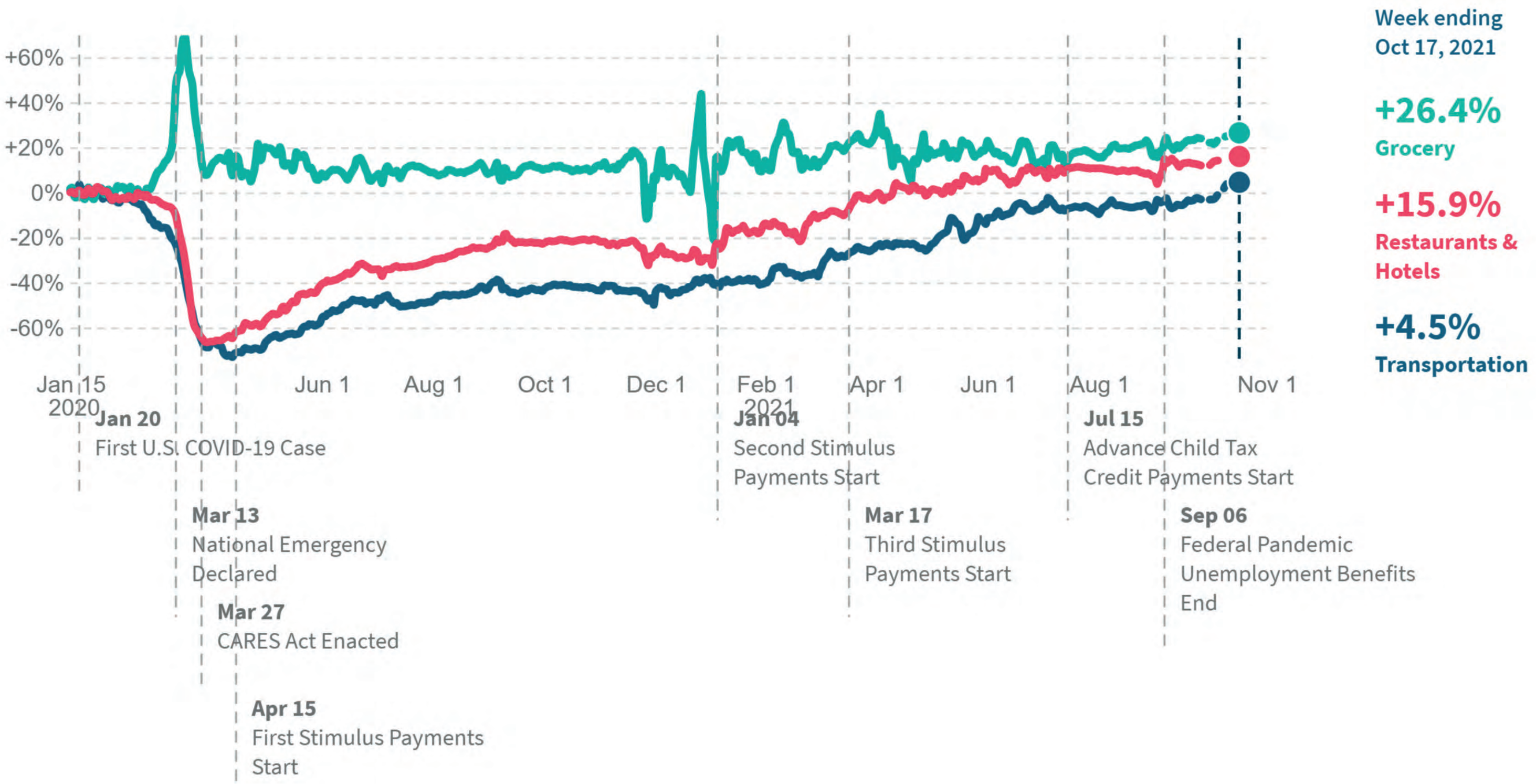
These alternative indicators can be useful to construct a high-frequency economic activity index as a proxy for official GDP. For instance, the OECD weekly tracker of GDP growth uses machine learning and Google Trends data about search behaviour related to consumption, labour markets, housing, trade, industrial activity, and economic uncertainty to monitor economic activity in 46 countries (Woloszko, 2020). Similarly, the Federal Reserve Bank of New York produces a weekly economic index based on ten indicators with data available at a daily and weekly frequency covering consumer behaviour, the labour market and production (Lewis et al., 2020). Several government agencies and research institutions have also created publicly accessible, near real-time platforms and dashboards to track economic activity across various domains. Examples include the Opportunity Insights economic tracker in the United States (Opportunity Insights, n.d.), the Federal Reserve Bank of St Louis COVID-19 economic data tracking of the U.S. economy (FRED, n.d.), the Office for National Statistics economic activity and social change real-time indicators for the United Kingdom (ONS, 2021), the COVID-19 data portal on the New Zealand economy (Stats NZ, n.d.), and the Financial Times pandemic crisis global economic impact tracker (Financial Times 2021).

3.0 How Useful Are High-Frequency Indicators In Tracking Economic Activity?

The main advantage of high-frequency indicators is the fact that they are, by definition, updated and available on a daily or weekly basis, thus making it possible to monitor economic activity on a near real-time basis. In this section, we present selected applications of high-frequency and more granular data in tracking the economy during the COVID-19 pandemic and discuss the insights generated.

Consumer spending. Bank card transactions can be analysed to understand changes in consumer spending behaviour induced by the pandemic. Spending can be broken down by the type of activity and by sector. Data on daily credit and debit card spending in the United States show that total consumer spending declined by more than 30 percent at the end of March 2020, relative to January, after the national emergency was declared in mid-March. Most of the change was due to reduced spending on goods and services that require in-person physical interaction, such as restaurants, hotels and transportation, which plunged more than 60 percent (Figure 1). Spending on groceries, on the other hand, jumped nearly 70 percent in mid-March, as the coronavirus-induced uncertainty triggered panic buying and hoarding. Consumer spending has since recovered and was well above pre-pandemic levels as of mid-October 2021.

Figure 1.
Daily consumer spending in the United States



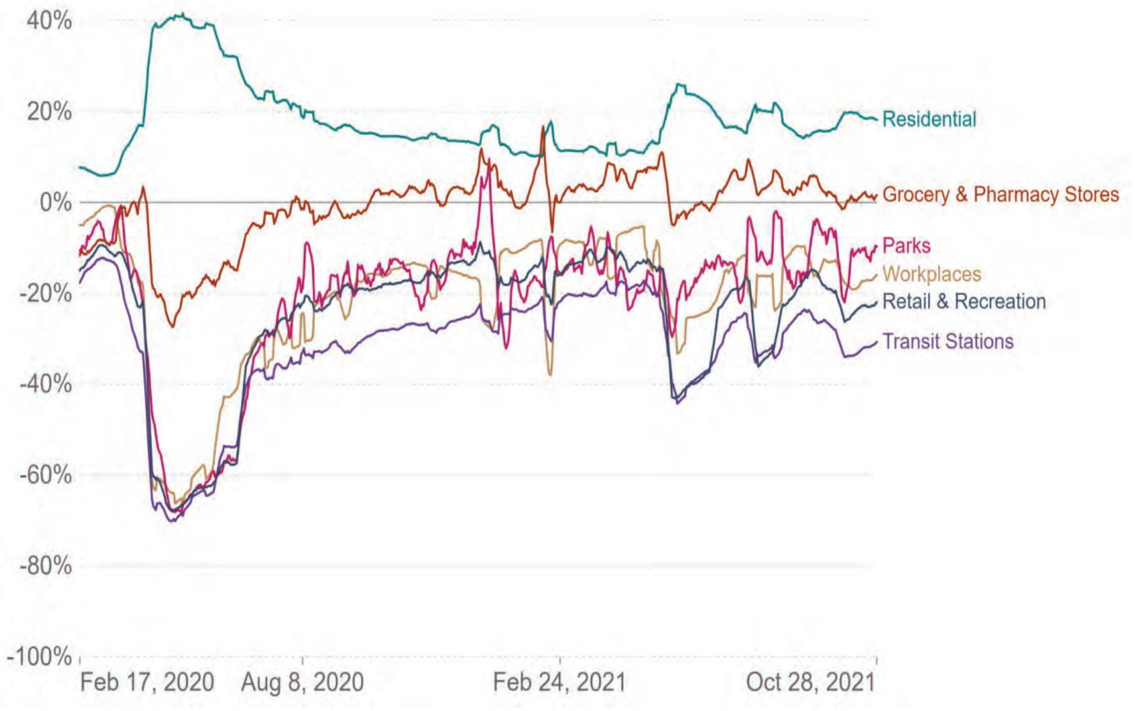
Source: *Opportunity Insights Economic Tracker based on data from Affinity Solutions.*
Note: Percent change in average consumer credit and debit card spending, indexed to January 4-31, 2020 and seasonally adjusted. The dashed segment of the lines is provisional data, which may be subject to revision.

Community mobility. Mobility data based on tracking cell phone locations captures the impact of de facto movement restrictions, which can be used to analyse compliance with de jure mobility restriction policies. Google provides daily data in its COVID-19 Community Mobility Reports, which tracks movement trends over time by geography and across different categories of places. Similarly, Apple publishes daily data through the Mobility Trends Reports.

Data on mobility in Singapore show sharp declines in community movement in April 2020 when the government imposed "circuit breaker" measures that included stay-at-home orders and a cordon sanitaire to curb infections (Figure 2). Mobility fell by about 70 percent relative to the baseline for categories such as workplaces, retail and recreation, parks and retail stations. Footfall at grocery and pharmacy stores was less impacted due to the need to purchase essential items, while time spent in residential areas jumped 40 percent. Mobility gradually recovered in line with a relaxation of restrictions until May 2021, when measures were tightened again in response to a larger surge in infections. Following the country's strategy to move to an endemic stage of "living with COVID-19" in August, mobility began to improve again.

Figure 2.

Daily community mobility in Singapore

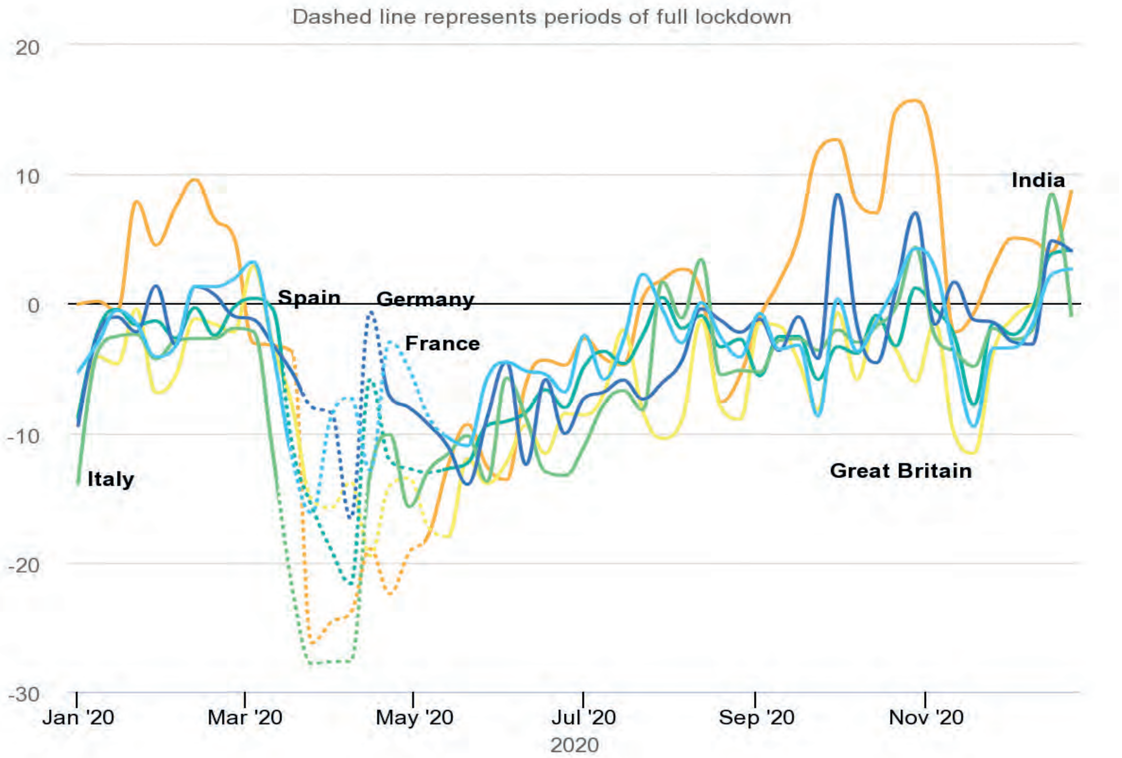


Source: Our World In Data based on Google COVID-19 Community Mobility Trends.
Note: Percent change in the number of visitors in categorised places compared to the baseline (median value for the 5-week period from January 3 to February 6, 2020). The index is smoothed using a 7-day rolling average.

Electricity consumption. Electricity is an indispensable input in production and is thus a good proxy for economic activity. Electricity consumption data are usually available at hourly intervals, making it possible to monitor activity in almost real-time. The data should be adjusted for temperature variations that affect the use of heating or air conditioners, as well as calendar effects such as weekends and holidays.

Data on weekly electricity demand in Europe and India show that demand fell steeply in April 2020 when lockdown measures were in place (Figure 3). In particular, Italy, which instituted harder lockdowns, saw a larger decline in electricity demand, by almost 30 percent. Demand gradually recovered as confinement measures were softened, and reached close to 2019 levels in October 2020. The re-imposition of restrictions in November negatively impacted electricity demand for European countries, but recovered and moved above 2019 levels in early 2021.

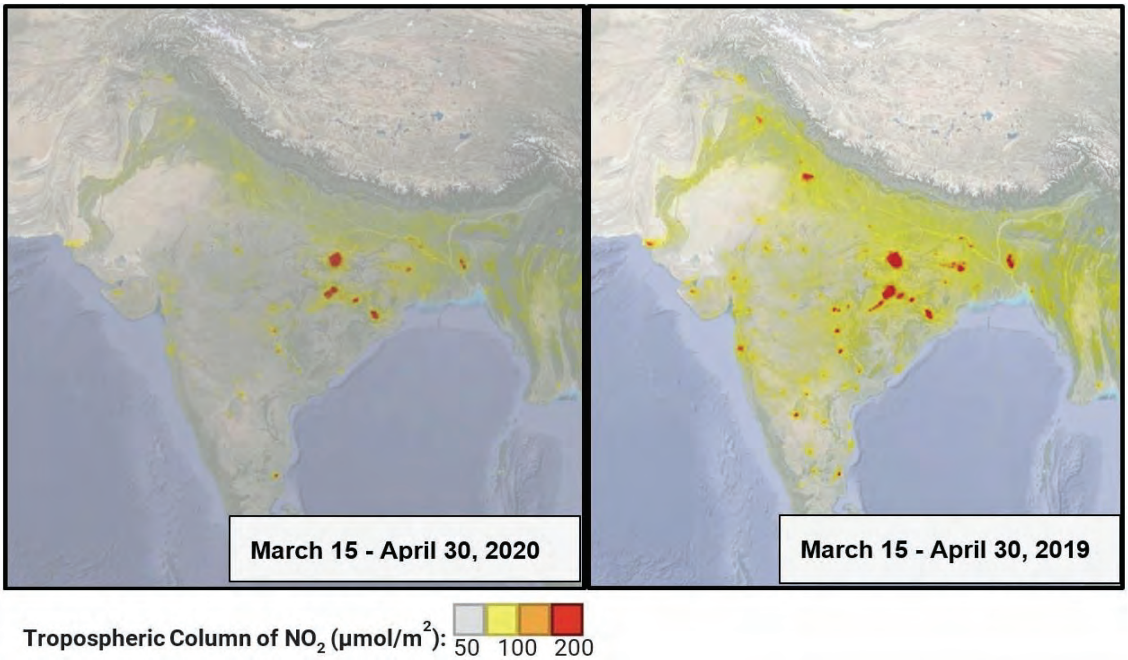
Figure 3.
Weekly electricity demand in selected European countries and India in 2020



Source: International Energy Agency (IEA) based on RTE (France), TERNA (Italy), Red Eléctrica (Spain) – all three accessed via the ENTSO-E Transparency Platform; Bundesnetzagentur SMARD.de (Germany), POSOCO (India), National grid (Great Britain).
Note: Year-on-year percent change in weekly electricity demand, and adjusted for differences in temperature.

Nitrogen dioxide emissions. The effects of the pandemic and the corresponding lockdown measures are not distributed evenly across geographies, with populous urban areas being hit harder than rural areas. Changes to the concentration of nitrogen dioxide (NO2) in the air can be used to indirectly measure the impact on economic activity. NO2 is a gas produced by the combustion of fossil fuels in industry and transportation. NO2 concentrations are measured across the globe and data are available in near real-time from the European Space Agency's Sentinel5-P program, which can be processed using cloud-based platforms such as Google Earth Engine to obtain estimates of NO2 emissions. Satellite data readings reveal sharp reductions in average NO2 concentrations in lockdown areas in India for the period March 15 to April 30, 2020 compared to the same period a year earlier (Figure 4).

Figure 4.
Satellite readings of tropospheric nitrogen dioxide concentrations in India in 2019 and 2020

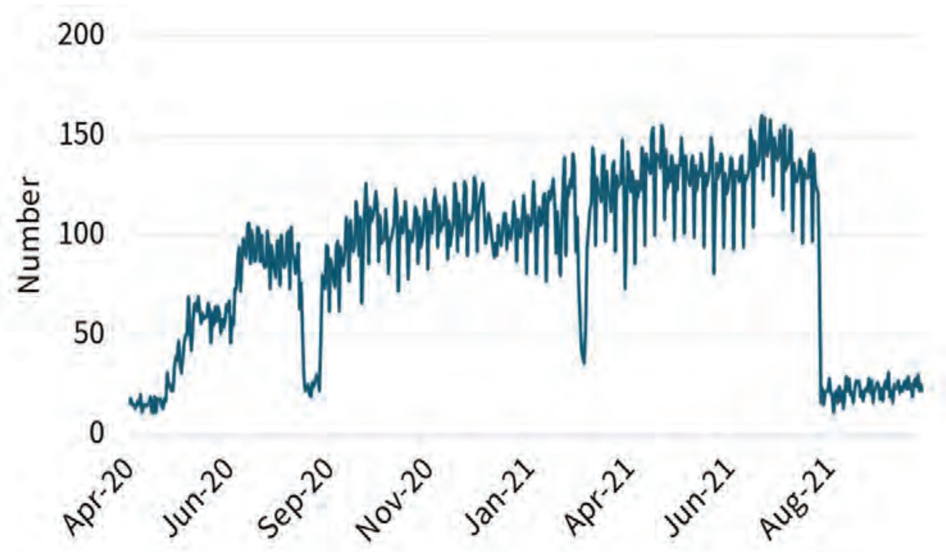


Source: World Bank based on Sentinel-5P Nitrogen Dioxide (tropospheric vertical column) data processed through Google Earth Engine.
Note: March 15 – April 30, 2020 represents the lockdown period.

Air traffic. The number of flights is an indicator of international mobility and can be a good proxy to measure the impact on the air transport sector. In New Zealand, for example, the number of daily flight departures at Auckland Airport plunged in April 2020 when borders were shut (Figure 5). The number of flights has gradually increased, but with occasional dips in August 2020 and February 2021 due to re-imposed border controls amid new surges in

COVID-19 infections. From mid-August to early December 2021, Auckland was in lockdown to contain a large outbreak, which included strict border controls.

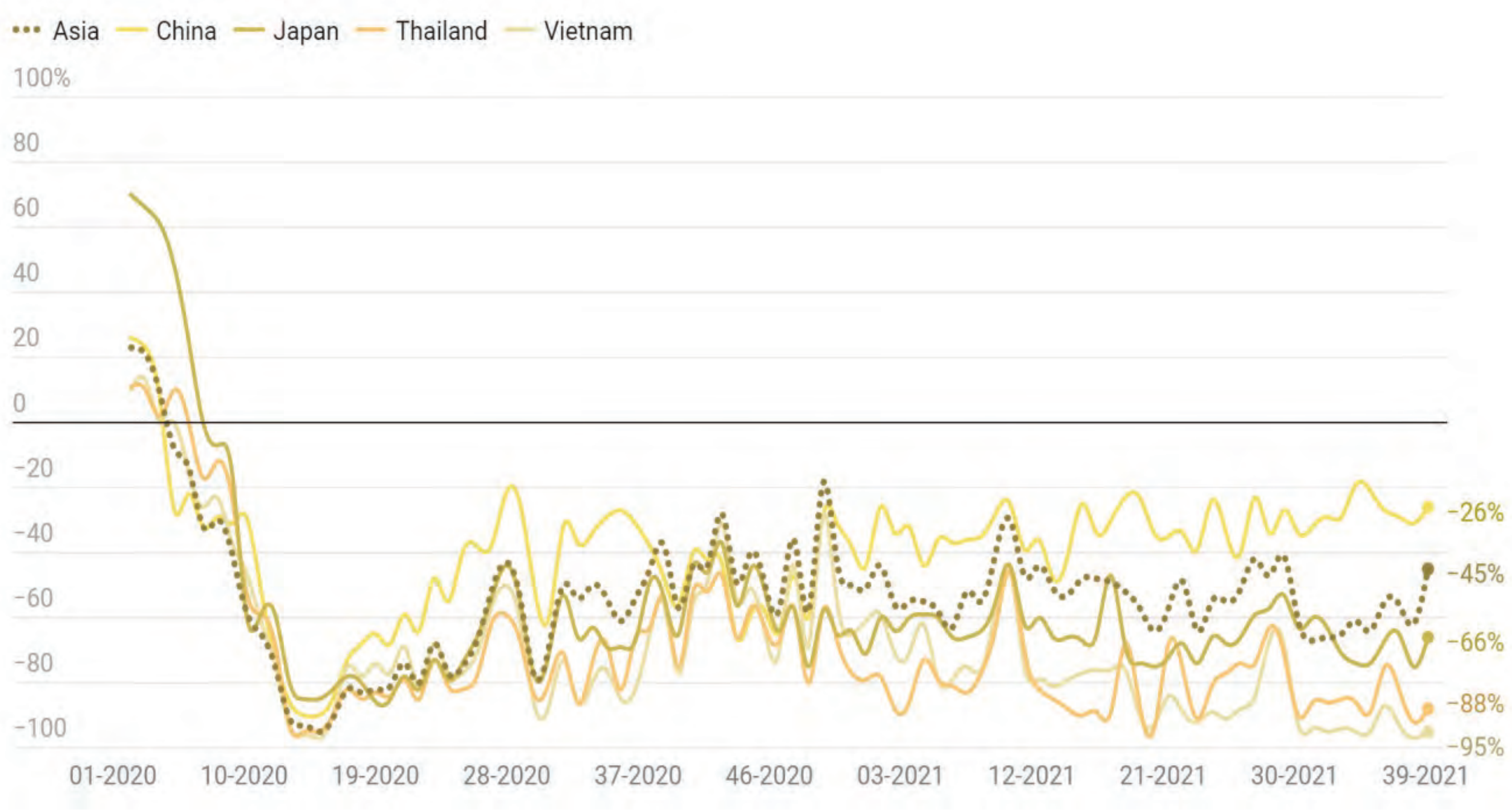
Figure 5.
Daily flight departures at Auckland Airport



Source: Stats NZ based on data from Flightradar24.

Vacation rental reservations. The impact of the pandemic on the tourism industry can be examined by analysing changes in vacation rental reservations from popular accommodation listings such as Airbnb, Vrbo, and booking.com. Weekly reservations in Asia plunged by nearly 100 percent at the trough at the end of March 2020, relative to the same period in 2019, reflecting international travel restrictions and national lockdown measures (Figure 6). Vacation rental reservations have recovered slightly after restrictions were eased but they remained significantly below pre-pandemic levels as of October 2021.

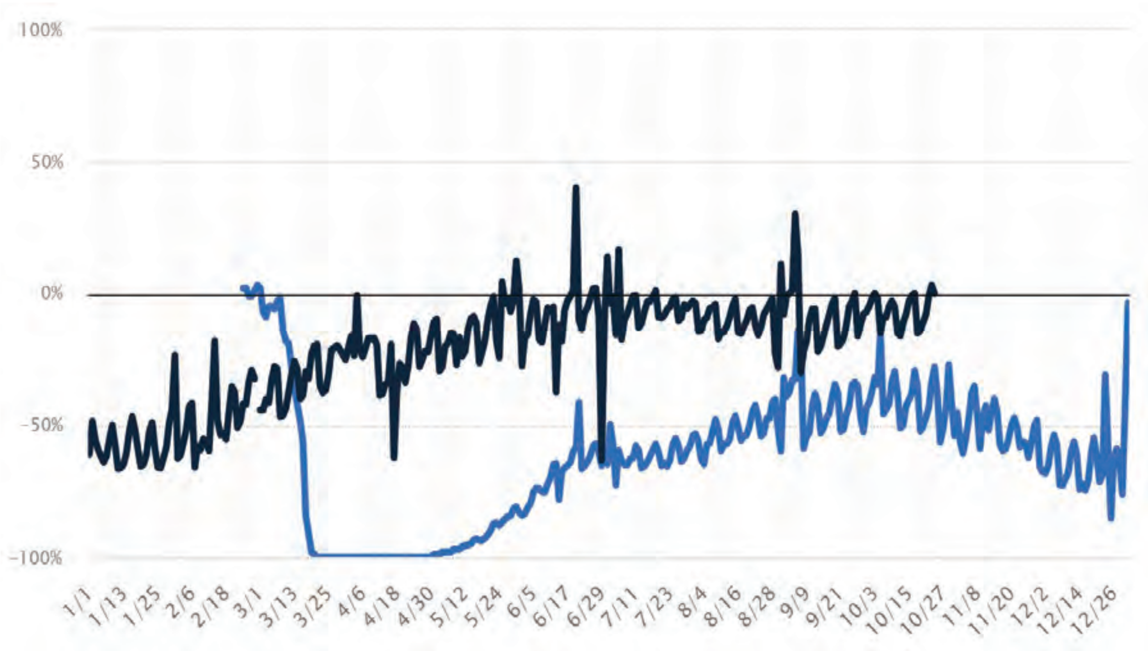
Figure 6.
Weekly vacation rental reservations in selected Asian countries



Source: Transparent.
Note: Percent change over corresponding week in 2019.

Seated restaurant diners. Data on daily seated diners at restaurants can show how the restaurant industry has been impacted by outbreak containment measures. In the United States, there were virtually no seated diners in April 2020 when stay-at-home orders were enforced (Figure 7). The numbers gradually improved after restrictions were lifted. As more and more Americans have been vaccinated against COVID-19 and local economies reopened, diners returned and surpassed pre-pandemic levels in May 2021. The growth in 2021 relative to 2019 also highlights how restaurants have become more creative in increasing their outdoor seating capacity and reducing turnaround times to accommodate more guests.

Figure 7.
Daily seated restaurant diners in the United States

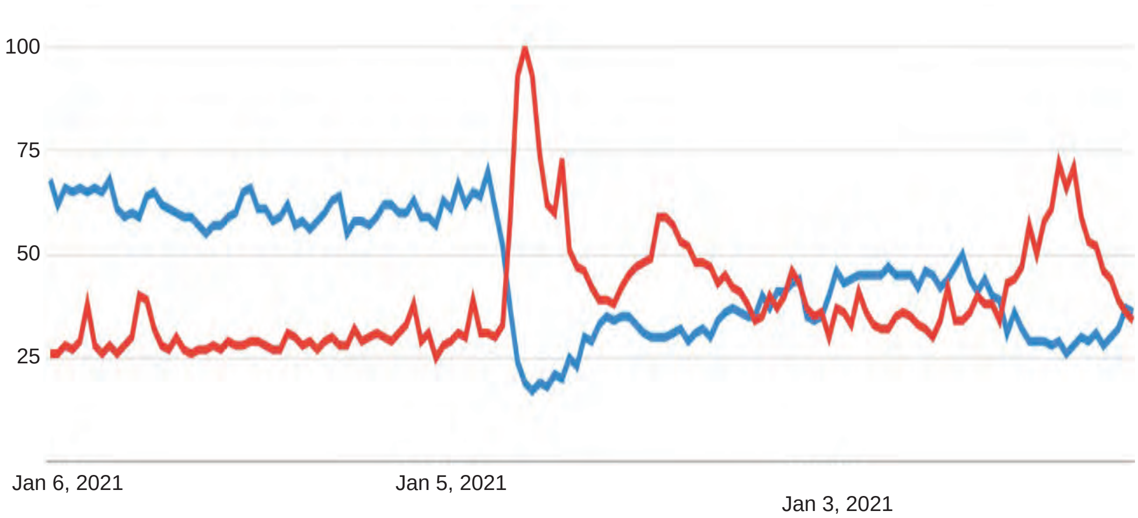


Source: Statista based on data from OpenTable.
Note: Percent change in seated restaurant diners in 2021 (dark blue) and 2020 (light blue) relative to 2019, based on the same days of the week (not the same date).

Internet search. Data on internet search can be a good proxy of consumer demand as its relative search volume provides signals on consumer purchase intentions. Google provides details of searches made by users for a given term in a geolocation (country, state, or city) over a specified period through the Google Trends tool and is publicly available on a weekly basis. The data are transformed into an index between 0 and 100, where the highest search volume for a given search term is normalised to 100 and all other data points are scaled relative to this maximum data point.

For example, Google search terms for “bus” in Australia fell markedly in March 2020 when lockdown measures were imposed. By contrast, searches for “delivery” spiked in the same period as people had to stay home and resort to online purchases of groceries and food, which benefited delivery service providers. The trend in the Google searches normalised somewhat after restrictions were eased, but the recent lockdown between July and October 2021 have again led to search patterns resembling those a year earlier.

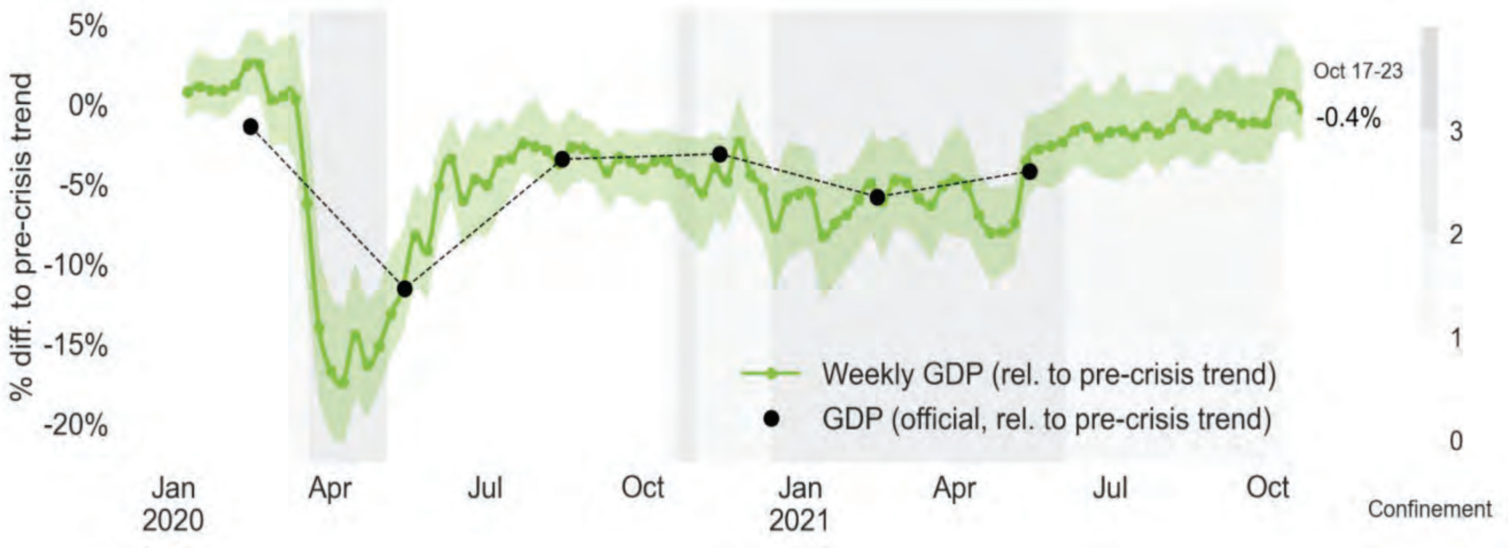
Figure 8.
Google search terms for “bus” and “delivery” in Australia



Source: Google Trends.
Note: Data calculated based on the ratio of the total search volume for a given search term to all searches in a geographic region and over a given period. The highest ratio is normalised to 100 and the remaining ratios are scaled relative to the maximum data point. “bus” is the blue line and “delivery” is the red line.

Weekly economic activity index. High-frequency indicators have been used to construct an aggregate economic activity index as a proxy of GDP. An example is the OECD weekly tracker of GDP growth, which applies machine learning techniques to a panel of Google search data that provides information about search behaviour related to consumption, labour markets, housing, trade, industrial activity, and economic uncertainty. The high-frequency tracker is able to better capture changes in economic activity than official GDP statistics. In Germany, for instance, the sharp drop in economic activity from March to May 2020, when pandemic-related restrictions were most intense, is reflected in the weekly tracker with a trough at -18 percent in mid-April relative to the same week in 2019. However, the depth of the contraction in economic activity is averaged out in the GDP data for the second quarter of 2020, with a fall of only 11.3 percent year-on-year.

Figure 9.
OECD weekly tracker of GDP growth in Germany

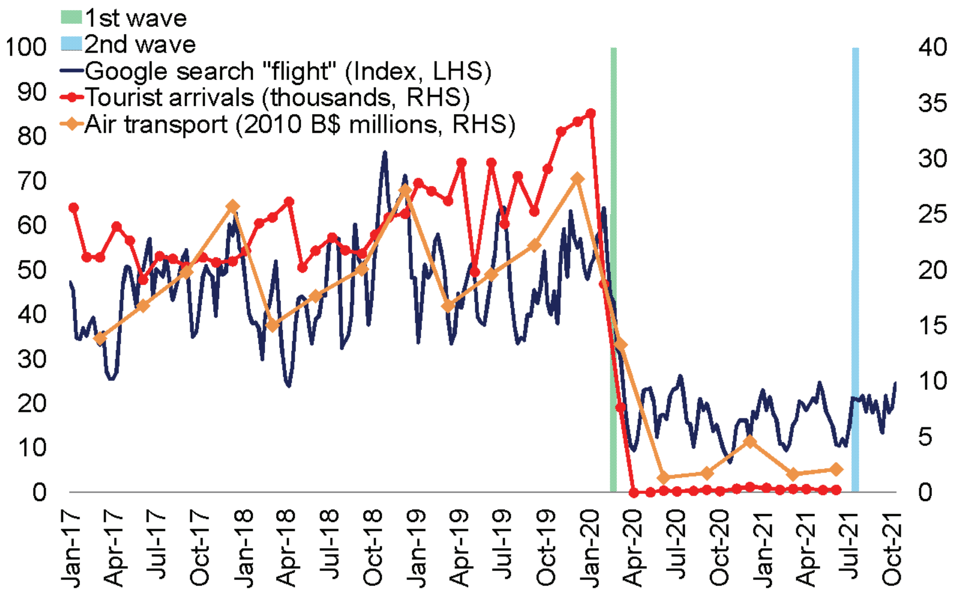


Source: Organisation for Economic Co-operation and Development.
Note: The green confidence band shows 95% confidence intervals. The estimate of weekly GDP is relative to the pre-crisis trend, which is proxied by the November 2019 OECD Economic Outlook forecasts. The darkness of the grey background reflects stay-at-home confinement requirements based on the Oxford COVID-19 Government Response Tracker (0 - no measures, 1 - recommend not leaving house, 2 - require not leaving house with exceptions, 3 - require not leaving house with minimal exceptions).

4.0 High-frequency Economic Indicators for Brunei

The availability of high-frequency and more granular indicators seems to be lacking in Brunei, or at least not readily accessible to the public. To illustrate the usefulness of tracking economic activity using high-frequency data, we examine how quarterly output in the air transport sector can be proxied by the monthly number of international tourist arrivals and weekly Google search for "flight". Figure 10 plots the three time series from 2017 onwards.

Figure 10.
Quarterly real output of the air transport sector, monthly tourist arrivals, and weekly Google search for "flight"



Source: Google Trends; Tourism Development Department, Ministry of Primary Resources and Tourism; Department of Economic Planning and Statistics, Ministry of Finance and Economy.

Overall, the time series display similar patterns, with a slightly increasing trend before the first COVID-19 outbreak in March 2020, a very sharp decline when borders were closed, and subsequently remaining significantly below pre-pandemic levels. Weekly Google search data for flights within Brunei, signalling consumer behaviour relating to international travel intentions, appears to be a reasonable proxy of the output of the air transport sector. Likewise, the monthly number of international tourist arrivals is a good proxy. These alternative high-frequency indicators can help policymakers quantify the impact of the pandemic on the sector using econometric techniques. Moreover, collection of data may be delayed by outbreak control measures, hence leading to a lag in generating official statistics. As of early November 2021, national accounts statistics for the third quarter are not yet published, and data for monthly tourist arrivals is only available until June. However, weekly Google search data are available publicly and can be used to forecast the output of the air transport sector.

Limitations of alternative indicators. Although alternative indicators can provide a snapshot of economic activity at a higher frequency than official statistics, they should be viewed as complementary to traditional indicators and not as replacements. During normal times, alternative indicators are more volatile and may not improve short-term forecasting of macroeconomic aggregates. Even during crisis times, a pool of potential alternative indicators for each economic sector, rather than a single proxy, should be considered to track changes in economic activity.

Some alternative indicators are also biased, as they may reflect particular geographies or cities and cannot be taken as a proxy for national indicators. For example, data generated from credit card spending largely reflects the economic situation of the formal economy and of particular population groups. Those without access to credit cards and spending in the informal economy would not be captured.

A near real-time economic dashboard for Brunei. Government agencies are already collecting myriad types of data in every economic sector. More importantly, the private sector holds valuable high-frequency data and academia produces insightful research that the government can leverage on. The private sector will likely have an incentive to share and contribute data if the government makes high-frequency data publicly available. A near real-time dashboard can be developed by pooling these resources into an integrated tracking framework. To ensure data are collected without significant delays, new methods of data collection, such as through mobile applications, can be considered.

A key challenge is to develop a collaborative platform through which the private sector and academia can contribute data in real time. Data privacy is another critical issue that may limit participation from the private sector. One approach is for the government to identify clearly what indicators are important to track economic activity. The requirements can then be communicated to the private sector, who can then decide what to contribute and in which form it could be provided. The sensitive microdata would then be aggregated at a level that is sufficiently granular to permit meaningful economic analysis while preserving data confidentiality. The data frequency depends on the volume of transactions and whether there is a robust system for data collection. For example, bank card transaction data can be reported weekly to the Brunei Darussalam Central Bank and aggregated by merchant codes that correspond to economic sectors. Consumer spending at an individual level is not shared with the regulator and data at the bank level is not disclosed to the public. Instead, the data are pooled across all banks and the aggregate spending by sector can be made accessible to the public.

Similarly, academia may produce insights based on novel approaches to interpreting data. For example, data science and machine learning methods can be applied to perform real-time natural language processing on Twitter tweets, which can signal changes in economic sentiment such as unemployment. The high-frequency times series generated can either be shared with a coordinating government agency or be pushed to an integrated platform in real time.

Table 1 outlines a non-exhaustive list of potential high-frequency economic indicators that can be included in the dashboard. Most of these data are already currently collected. The availability of these indicators in a near real-time platform can help policymakers in economic surveillance and make informed decisions. They are also of great value to consumers and the business community to gauge the state of the economy in making purchase and investment decisions. Researchers can also use these indicators to construct a weekly economic index or to nowcast and forecast economic activity.

Table 1.
Potential high-frequency economic indicators

Sector	Indicator	Frequency	Data source
Industrial	Electricity consumption	Daily or weekly	Department of Electrical Services
	Oil and gas production	Weekly	Ministry of Energy; oil and gas producers
	Petrochemicals production	Weekly	Ministry of Energy; petrochemical companies
	Non-oil and gas manufacturing production	Weekly or monthly	Industry and Business Ecosystem Division; manufacturing companies
	Cement production	Weekly	Authority for Building Control and Construction Industry; cement producers
Agriculture	Agricultural production	Weekly or monthly	Ministry of Primary Resources and Tourism; agricultural producers
Hospitality	Tourist arrivals	Weekly	Tourism Development Department; Brunei International Airport
	Hotel occupancy rate	Weekly	Tourism Development Department; Brunei Association of Hotels
	Hotel reservations	Weekly	Tourism Development Department; Brunei Association of Hotels
	Restaurant reservations	Weekly	Department of Economic Planning and Statistics; restaurants

Sector	Indicator	Frequency	Data source
Consumption	Automobile sales	Weekly	Brunei Automobile Traders Association; car dealers
	Retail sales	Weekly or monthly	Department of Economic Planning and Statistics; retail shops
	Petrol sales	Weekly	Ministry of Energy; petrol stations
Finance	Card transactions	Weekly	Brunei Darussalam Central Bank; banks
	Loans and financing	Weekly	Brunei Darussalam Central Bank; banks
Transport	Number of flights	Daily or weekly	Brunei International Airport
	Air cargo volume	Weekly	Brunei International Airport
	Sea cargo volume	Weekly	Marine and Port Authority; port operators
	Land traffic count	Weekly	Land Transport Department
Infocommunications	Broadband usage	Daily or weekly	Ministry of Transport and Infocommunications; telecommunications service providers
	Number of mobile and broadband subscriptions	Weekly or monthly	Ministry of Transport and Infocommunications; telecommunications service providers
Employment	Number of job vacancies	Weekly	JobCentre Brunei
	Number of registered jobseekers	Weekly	JobCentre Brunei
	Number of unemployed persons	Weekly	Department of Economic Planning and Statistics; surveys
Business	Number of registered businesses	Weekly	Registry of Companies and Business Names
Prices	Consumer prices	Weekly or monthly	Department of Economic Planning and Statistics; retailers
	Exchange rates	Daily	Brunei Darussalam Central Bank
	Interest rates	Daily	Brunei Darussalam Central Bank; banks
Others	Consumer and business confidence	Weekly or monthly	Department of Economic Planning and Statistics; surveys
	Mobility	Daily or weekly	Ministry of Transport and Infocommunications; telecommunications service providers
	Internet search	Weekly	Google Trends
	Sentiment	Weekly	Social media platforms

Source: Author's interpretation.

5.0 Conclusion

The COVID-19 pandemic has evolved into a global health and economic crisis that is unprecedented in scale and impact. The need for informed decision making in short time frames has created unique challenges to policymakers around the world. Having the right data at the right time is of paramount importance. Policymakers need to understand the health impact and peoples' anxieties, behaviours and expectations, as well as quantify the economic impact to design proportionate relief measures to affected firms and households. Many countries have launched contact tracing applications and real-time dashboards for disease surveillance and outbreak control. However, a similar real-time tracking of economic outcomes has been comparatively less visible.

The pandemic has posed challenges in traditional means of data collection, resulting in delays in publishing official statistics, which are already typically published with a lag during normal times. Near real-time and high-frequency data are necessary and more effective in surveillance and forecasting when economic activity is changing rapidly. The private sector holds invaluable high-frequency data and academia produces insightful research that can help policymakers better gauge the impact of the pandemic across economic sectors. Governments should collaborate with the private sector and academia to create a multi-sectoral dashboard to support real-time impact assessment, which also will be crucial in effectively responding to future crises.

In the case of Brunei, many alternative high-frequency data are already collected by government agencies and the private sector. A near real-time dashboard can be developed by pooling these resources into an integrated tracking framework. The key challenges are to develop a collaborative platform and address data privacy concerns. The government can step forward to provide high-frequency indicators accessible to the public to incentivise data sharing from the private sector. The private sector can anonymise and aggregate data to a sufficiently granular level that permits effective economic monitoring yet preserve data confidentiality and business interests.

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Family Capital and Intergenerational Transfers of Support Within Families in Brunei

Azrinah Rahman

Abstract

This paper reviews generally the concept of family capital and intergenerational support and examines the patterns of social exchange of intergenerational support in monetary and non-monetary forms within Bruneian families between elderly parents and their adult children. This study, based on the accounts of 8 grandmothers, concludes that societal and cultural structures in Brunei, especially intergenerational co-residence arrangements and grandparental childcare support, have been an important enabler for women, particularly those with young children, to engage in paid employment. It also emphasises the reciprocity of financial support to elderly parents, as part of filial obligations tied to religion and culture in Brunei. This study contributes to a greater understanding of the roles of exchange and altruistic motives in modern-day Brunei parent-child-grandchild support.

Keywords: *family capital, intergenerational support, childcare, filial obligation*

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1.0 Introduction

Families and households are fundamental structures in everyday life. Family is the most important social group, particularly in Southeast Asia. As White, Klein and Martin (2014) have pointed out, the family is unique in the following ways: "(1) families last longer than most other social groups; (2) families are intergenerational; (3) families contain both affectionate and biological relationships; and (4) these forms of relationships link the group to larger kinship organisations" (White et al., 2014, p. 13). In Southeast Asian cultures, the family is an individual's religious, economic, political, and social core. It is the first loyalty and primary obligation (Morrow, 1989). Research has shown that kinship ties are particularly strong in parts of Asia, the Middle East, South America, and Sub-Saharan Africa. "In the majority of the countries in these regions, more than 40 percent of children lived in households with other adults besides their parents" (Trends, 2015, p. 11).

Family lives in Asia are still an underexplored territory in social research, especially in relation to Brunei. In her study of major trends affecting families in East and Southeast Asia published in 2003, Quah made a comparative analysis of family trends in the ten countries in East and Southeast Asia for which comparative data were available. In her study, the countries included in East Asia are China, Hong Kong, Japan and the Republic of Korea, while Indonesia, Malaysia, the Philippines, Singapore, Thailand and Vietnam represent Southeast Asia. Other countries, including Brunei, were not included due to unevenness in data reporting and available population statistics.

This paper aims to offer valuable new insights in understanding how intergenerational transfer affects members of the family, particularly in terms of childcare provided by grandparents to support their working children, and filial obligations of monetary support provided to elderly parents. A central theme to this paper is the impact, interconnection and meaning of intergenerational family relations and support in Brunei through shared capital resources. I conceptualise 'family capital' in this paper as shared resources within a family including financial capital, human capital and social capital, to which members of the family can turn for support from each other. I explore the interdependence of families in Brunei as understood by the 8 grandmothers in my study, through the exchange of monetary and non-monetary flow of support not only from mothers to children and adult children to ageing parents, but also from grandparents to grandchildren.

1.1 Theoretical framework

Despite the vast difference in the sociocultural and economic development of countries in Asia, White et al. (2014) identified certain shared values that are important in contextualising family theory, namely: (i) religion; (ii) patriarchy and patrilineal descent systems; (iii) industrialism and urbanism; and (iv) the 'salaryman' role. With regard to the Southeast Asian region, there is a strong influence of Islam in countries including Brunei, Indonesia, Singapore and Malaysia. Although Islam is monotheistic, it shares with Confucianism and Buddhism the view that there is no division between religion, philosophy and moral principles. There is strong adherence to the values of filial obligations, reciprocity, respect and intergenerational cohesion. "Research must recognise the relationship between cultural belief systems and individual understandings of roles and obligations" (Bengtson & Putney, 2000, p. 281). This can be addressed through "a multi-level approach that takes into account both the variability of intergenerational relationships within individual societies and the institutional variability of family and kinship systems across societies" (Kohli, 2005, p. 270).

My theoretical framework for understanding intergenerational transfers within families in Brunei draws on elements of Bourdieu's (1986) concept of capital, Coleman's (1988, 1990) family capital and Quah's (2003, 2009) concepts of social capital. Bourdieu's capital theory (1991) looks at three forms of capital that I apply in analysing the available resources within a family in Brunei:

i. economic capital refers to monetary and economic resources, including assets, property rights, and cash;
ii. social capital refers to non-financial resources based on networks, relationships and connections among people;
iii. cultural capital refers to knowledge, disposition, and skills, passed from one generation to another.

For the purpose of this paper, it is also useful to apply Coleman's (1990) argument that family relationships tend to be holistic, a distinct social organisation from most other relationships that requires consideration of its social, cultural and religious context. Coleman (1990) created norms for family relations that do not require a mutually beneficial exchange to be carried out. In Coleman's (1988) framework of family, he touches on three important elements of family background:

i. financial capital refers to wealth or income of a family;

ii. human capital refers to the parents' education and potential to contribute to the children's development;
iii. social capital refers to the relationship between the children and the parents and other family members (Coleman, 1988, pp. 108-110).

To increase relevance in an Asian context, I adopt Stella Quah's framework of Southeast Asian families and social capital (2003, 2009), which refocused attention on the transmission of social capital through the important roles of senior generations in extended families, taking into consideration family values, attitudes and beliefs that are expected of them. "This portrayal of active engagement of seniors in sustaining family life in their multi-generational households is by no means unique to Asian societies" (Quah, 2009, p. 95). Being part of a family determines the context of an individual's place in his or her social sphere, and provides a capacity for shared capital that can be utilised by family members. Generational support is particularly important in providing support via familial roles for employed mothers in Brunei (Rahman, 2019).

In this research, filial obligation is an aspect of social capital that exists in family relationships. Social capital is a resource that increases when a person cultivates social relationships with others and provides them with resources or services so that they feel obligated to reciprocate in return (Coleman, 1988). Social capital will be useful in analysing the forms of support elderly parents provide their adult children, particularly in childcare. While economic capital is relevant in the analysis of monetary support that adult children provide to their parents, it is linked to the filial obligation (social capital) children feel towards their parents. Cultural capital or human capital is relevant in the context of grandparents passing valuable knowledge to their grandchildren in support of childcare as well as parental support in enabling mothers to pursue further developments in their career.

1.2 Methodology

This study is exploratory and descriptive in nature and aims to provide rich qualitative data and detailed descriptions of personal relationships for each woman regarding family and work roles. The study uses a data set obtained from qualitative semi-structured interviews held with eight grandmothers conducted between 2014 and 2015. These eight grandmothers had a total of 41 adult children and 84 grandchildren. The interviews covered a wide range of topics, ranging from social networks to what role family members played in terms of giving and receiving support, whether it be financial, practical, and emotional support. Interviews lasted one and a half to two hours and were conducted in Malay. For the purpose of this paper excerpts were translated into English. A brief description of the grandmothers involved in this study is given in

Table 1.

Some attributes of interviewed Bruneian grandmothers providing intergenerational support to their families

Participant	Age	No of children	No of grandchildren	Household living arrangements
Bulan	69	6	15	Intergenerational co-residence with 2 married daughters and grandchildren
Pertamina	65	1	1	Intergenerational co-residence with 1 married daughter and 1 grandchild.
Lily	62	3	6	Intergenerational co-residence with 1 married daughter and 1 grandchild.
Mawar	58	5	6	Intergenerational co-residence with 1 married daughter, 3 adult children and 3 grandchildren
Kenanga	68	6	8	Intergenerational co-residence with 1 married daughter and 3 grandchildren
Rowena	66	8	16	Intergenerational co-residence with 1 married daughter, 1 single son and 5 grandchildren
Balsam	75	6	23	Intergenerational co-residence with 3 married children (2 sons and 1 daughter) and 10 grandchildren
Selma	62	6	9	Intergenerational co-residence with 2 married daughters, 3 adult children and 4 grandchildren

2.0 Grandparents' Childcare Support and Co-Residence

As societies have industrialised and modernised, changing family structures have led to situations where members have found themselves without crucial social networks. In Asia, the values of reciprocity, family cohesion and filial obligation are strongly emphasised in culture and religion. Reciprocity characterises families and communities that exchange services and goods under patterns of giving and receiving that are socially sanctioned. Through reciprocity people establish mutually dependent associations of influence and exchange. These exchanges are two-way transfers that are mostly oriented for joint satisfaction. There is much evidence for intergenerational exchange in Asian countries. Adult children who give their parents support also receive support from their parents in China (Cong and Silverstein, 2011), Taiwan (Lee, Parish and Willis, 1994), Indonesia (Frankenberg, Lillard and Willis, 2002) and Malaysia (Lillard and Willis, 1997). Verbrugge and Chan (2008) find that Singaporean seniors who receive more monetary support from their children reciprocate by both monetary and non-monetary support. Lin and Yi (2013) also find evidence for reciprocity between adult children and their parents in East Asia, including in China, Japan, Korea and Taiwan.

In developing countries such as Brunei, many social interactions assume the form of reciprocity and giving within extended families in the absence of strong public sector infrastructure and policy support for more vulnerable groups, including employed mothers who are in need of childcare support, and the aging population. Therefore, the impact of intergenerational solidarity in Brunei is related to the notion of chain reciprocity, by which grandparents help parents and parents help children and in return each generation gives some support or care to the previous one. In Asian countries, and in many family systems, grandparents and other non-working family members fulfil childcare needs—they take over the job of childcare when the mother is at work.

Statistics have shown that household size in most Asian countries has experienced a decline due to a number of demographic changes, particularly due to fertility rates (Esteve and Liu, 2014). While the changes to the fertility rate in Brunei are comparable to other nations, household composition remains surprisingly high, again reiterating the continuing impact of traditional values and cultural norms of intergenerational co-residence in the country. In structural terms, intergenerational co-residence is still very much practiced in Brunei, particularly in the early years of marriage. According to United Nation Statistics (2017), some 44 percent of households in Brunei have more than 6 members, compared to 11 percent in Singapore, 29 percent in Malaysia, and 17 percent in Indonesia.

Although one is assumed to be independent once reaching adulthood, the interdependence of families in Brunei continues even in adulthood. The maintenance of close relational ties within multigenerational families has long been a cultural ideal in Asian families. In the discussion of the concept of the Asian family in the sociological literature, a distinguishing factor seems to be the high level of interdependence even after adult children are married (Mehta and Leng, 2008, p. 216). While Stella Quah (2009) argues that Asian family values are changing, with the elderly electing to live independent lives rather than in extended household living with children and grandchildren (Usui and Tsuruwaka, 2012), these changes are still relatively very new to Brunei and not as extensive as in other Asian countries.

The extended family system support mothers receive in childcare is a key enabler of paid employment as it provides a safe and secure childcare solution (Rahman, 2019). This very important benefit (of readily available child support from the family members themselves) in an interdependent family recognises that the employed mother is an important member of the family while providing necessary support for her to be able to perform her dual role efficiently. The intergenerational co-residence has been successful in providing employed mothers in Brunei the social capital (Putnam, 2000) that Quah (2015) states "influences a family's ability to simultaneously meet productive and caregiving needs" (p. 176).

Support from family members in childcare is common in the Asian region. Grandparents are one of the most important sources of informal childcare in Asia (see Ochiai, 2009; Ochiai and Molony, 2008; Quah, 2003, 2009, 2015; Mehta and Leng, 2008). In China, grandparents spend over 20 hours per week on childcare (Chen, Liu and Mair, 2011). In South Korea, over 60 percent of employed mothers utilise family support for childcare, particularly grandparents (Lee and Bauer, 2010). In Singapore, it is common for grandparents to provide childcare in dual income families (Low and Goh, 2015). This support is invaluable for employed mothers, as grandparents fill the childcare gap, especially when other options are not available. Quah's argument that Southeast Asian grandparents are still actively engaged in giving support to their multigenerational extended families holds true in this context (Quah, 2003, 2009).

In Brunei, grandparents remain the preferred childcare options for employed mothers (Rahman, 2019). In a qualitative study of 18 employed mothers in Brunei by Rahman (2019), most rely on grandparents to provide some form of childcare support. Putman (2000) refers to social capital as "connections among individuals–social networks and the norms of reciprocity and trustworthiness that arise from them" (p. 19). When a social network is maintained, individuals in the network share in the capital possessed by the network. The childcare provided by grandparents is one of the capital resources that employed mothers utilise in the exchanges of intergenerational solidarity (Rahman, 2019).

Co-residence is an important factor in grandparent childcare (Chen, Short and Entwisle, 2000). In Singapore, close proximity to the grandparents' residence is viewed as a convenient source of childcare support (Sun, 2012). The general pattern is for a newly married couple to reside with the groom's parents following marriage. In contrast, "matrilocal patterns are typical in Southeast Asia including Malaysia and Brunei" (Brown, 1969, p. 79). Brown (1969) in his study of Brunei society found that, although Brunei adopts a bilateral kinship system, there is preference for matrilocal residence after marriage, which further enhances relations with maternal kin. This finding is also supported by my study of living patterns of the current Bruneian generation. A large proportion of newly married couples in Brunei do not leave their parental home immediately after marriage. Three generation family households are the norm and most find it a convenient living arrangement as grandparents can assist with (i) looking after their grandchildren, especially when they are very young, and (ii) household labour (Rahman, 2019). In return, the well-being of elders (the grandparents) is taken care of by having their adult children under the same roof. This is one reason for the continued existence of an intergenerational co-residence structure as well as the absence of aged care provision in Brunei. These arrangements support the close maternal relations between mother and daughter as well as positioning women as primary caregivers, as most married children who stay in the parental home are daughters.

Similarly, co-residence with grandparents is strongly linked with the provision of grandparent childcare in Brunei. All eight grandmothers in my study are living in an intergenerational household and provided childcare support, particularly to their adult children, mainly their daughters. Trust is an important element in childcare relationships, and a key element of family social capital (Coleman, 1990; Putman, 2000; Quah 2009). Similar findings about trust and grandparent childcare provision were found in other studies in East Asia (see Lo, 2017; Quah, 2009). My findings show it is usually grandmothers who provide childcare support, emphasising women's role and responsibility in care work. This supports similar findings in existing studies in both Western and East Asian contexts that caregiving is women's work and that grandmothers mainly provide childcare (see Chen, Liu, & Mair, 2011; Lee & Bauer, 2013; Wheelock & Jones, 2002).

Several grandmothers interviewed view the support they provide as their obligation as family members. They presume that it is 'natural' to help because some of them received or provided the help and understand the benefit of having family assistance in childcare. Bulan has 15 grandchildren and has cared for many of them, in support of their working parents. In her younger years, she also provided childcare support to her sisters who were working. She clearly views childcare support as part of her family obligation. Even with the presence of an immigrant worker to undertake childcare work, Bulan still plays a role in the care. Her husband, she says, does not involve himself much in caring for their grandchildren, reiterating women's role in care work.

Of course I will help them (my children) if they need it. I used to look after some of my siblings' children when they were young because their mothers worked. That is what families are for.

I've looked after more than 10 of my grandchildren. With the first few grandchildren, the care was more extensive. I bathed and fed them. But now that I'm old, I do less. Most times, my grandchildren are here with their helpers. So the helpers do most of the childcare work while I monitor. Even after my husband retired, he didn't really do much caring for our grandchildren. (Bulan, mother of six, grandmother of 15, intergenerational co-residence)

Mawar has experienced both roles in family childcare support. She worked for several years when she was a young mother and received childcare support from her sister who was at home. Now she provides childcare support to two of her married daughters. Mawar also views childcare support as a family obligation. According to Mawar, although her daughter has her own house, she moved back to the parental home after her baby was born. And despite her complaints about the travel to her other daughter's place to provide childcare, she still makes the commute to help.

My daughter and her family live with us. They have a place of their own but she moved back in after she had her first child. It made sense since she doesn't have a helper and we need to look after the baby. For my other daughter, we had to go to her place every day when she had a baby. It was tiring but someone needs to help her. If we don't help her, it's as if she doesn't have any family to rely on. (Mawar, mother of five, grandmother of six, intergenerational co-residence)

Grandparents take up grandchild care work as an act of love and a 'second chance' at parenting (Ochiltree, 2006; Wheelock & Jones, 2002). Some parents rely so heavily on grandparent childcare support that it seems as if the child has two sets of parents. Two grandmothers I interviewed are very involved in their grandchildren's upbringing and perform daily mothering tasks including supervising feeding, bathing, school runs, planning birthdays and enrolling them for extra classes. Even major decisions such as switching schools are made by these grandmothers. Pertamina shared how she 'mothers' her granddaughter.

My daughter should thank her lucky stars that I am able to help out. Not everyone is this lucky. Her daily routine is just a kiss to her daughter and she goes off to work. I then take over, making sure the helper gets my granddaughter ready for school, has her breakfast and then I send her to school. My husband and I will also do all the school runs, take her to phonic classes and other extra classes. (Pertamina, mother of one, grandmother of one, intergenerational co-residence)

Lily is another example of how extensive grandparenting occurs. Her daughter, a businesswoman, travels frequently, leaving her child to be cared for by her grandparents. This pattern has lasted for years.

I've looked after my granddaughter since she was eight months old because her mum is always away on business trips. Now she's almost five years old. It's like I have become a mum again. Have to drop and pick her up from preschool every day. Even when I go on holiday with my husband, we would take her with us. Her father is a Malaysian and wanted to take her to stay in Sarawak. I said no way. I'm planning to enrol her at a different school next year. (Lily, mother of three, intergenerational co-residence)

The importance of grandparents is not only in the care support they provide, but also as family relations. "Grandparents carry invaluable cultural knowledge that can give their grandchildren a sense of belonging both in the community and within their extended family" (Ochiltree, 2006, p. 19). The contact and close relations between grandchildren and grandparents are ways of ensuring the continuous passing of knowledge, traditions and culture from one generation to the next. The provision of grandparent childcare is more than simply care support; it is also an avenue for learning, and the sharing of cultural capital in intergenerational transfers, a 'cultural imperative' (Mjelde-Mossey, 2007). Bulan shared her thoughts regarding the changes she has seen in contemporary children's upbringing and the role of grandparents in knowledge transfer.

Children are too Westernised nowadays. They don't even know how to eat traditional food or delicacies, preferring burgers and pizzas. When the young children are here, they are exposed to traditional food because I like to eat it. Some of my grandchildren don't even know how to speak Malay. Even their parents speak English with them. But when they are here, they are forced to speak Malay to us (the grandparents) because we can't speak English well. We are Malay people so they need to learn how to talk in their mother tongue. (Bulan, mother of six, grandmother of 15, intergenerational co-residence)

Stronger family ties may also be developed through grandparent childcare. As care for grandchildren becomes a main focus of the family, it becomes a way of 'doing family' (Morgan, 1996). For grandparents performing childcare, it means family members visit them more frequently. Even when no childcare is needed, especially when their grandchildren have grown, parents still send their children to visit their grandparents to ensure family ties are maintained between older and younger generations.

Rowena, a grandmother of 16 grandchildren, shared her experiences of grandparent care. When she was providing extensive care support, her children came by the house daily. As the grandchildren grew and no longer needed constant care, she found visits from her children lessened significantly. This supports the notion that grandparent care provides an avenue to foster stronger family ties through the frequency of visits.

The age gap between my eldest four and the younger ones is quite great, so my older grandchildren are already adults and working while my younger grandchildren are still very young. My older children who married earlier were given extensive childcare assistance. Most of my children are not working in highly paid jobs, so they don't hire helpers. So, I helped with childcare. They would come every day to send their children. But now that their children are big, I only see them once a month. (Rowena, mother of eight, grandmother of 16, intergenerational co-residence)

3.0 Filial Obligation Through Financial Support

In the existing literature on financial intergenerational exchange (including financial assistance) within the family, a number of studies in the United States found that only 10 percent of these surveyed are engaged in an exchange relationship (Eggebeen and Hogan, 1990; Hogan, Eggebeen, and Clogg, 1993). More than half of American adults do not engage in financial reciprocity (giving and receiving) with their parents, and only 10% of those surveyed actively engage in an exchange relationship (Hogan et al., 1993). This is linked to characteristics of the American ideologies of individualism, hard work and meritocracy (Hochschild, 1995; Hogan et al., 1993).

By contrast, within the religious and cultural context of Asian cultures including Brunei, there is strong adherence to the values of filial obligations, reciprocity, respect and intergenerational cohesion. The notion of family obligation derives from the term familism, defined as possessing the "feeling of loyalty, reciprocity and solidarity" to one's family (Sabogal, Marín, Otero-Sabogal, Marín, and Perez-Stable, 1987, p. 398). In Filipino culture, for instance, traditional values that emphasise collectivism, family orientation, and an obligation to respect and contribute towards one's parents are expected of children (Go, 1994). In this study, I found a continuation of these values amongst the current generation of Bruneians towards the care of their parents and the sharing of resources. I examine the meanings grandmothers assign to these supports.

In Brunei, the general expectation is for adult working children to provide regular financial support to elderly parents. Monetary support usually comes in the form of a monthly payment because salaries are generally paid on a monthly basis in Brunei. My study confirms that financial support from adult children to elderly parents is a widespread practice. All eight grandmothers informed me that they receive monetary support from their children. Financial support from adult children to elderly parents is a display of support, respect and concern (filial obligations as an aspect of social capital). An Asian value that Bruneian working adult adhere to is the aspect of "children owing the parents everything which is a combination of Confucian filial piety and the fact that the parents have sacrificed and done so much for their children"

(Chua, 2011, p. 60).

Paid employment "has led to the historical predilection for sons as the providers of 'old age insurance' being extended to daughters" (O'Neill, 2018, p. 36). Supporting their daughters' human capital development puts parents too in a better financial position as they are able to gain from the economic capital/financial capital the children possess. This in turn elevates their social standing through the social capital they share. These financial supports have meaningful impacts on the lives of the elderly parents as well as on their social standing. Bulan expressed her happiness in being financially independent due to the monthly allowances she receives from her children, something she had never enjoyed as a housewife in her younger years (due to her dependence on her husband, who was the main breadwinner).

I was a housewife so I depended on my husband to provide for me and my children. And he is quite stingy. He didn't earn much as a low-level policeman, enough to support our basic needs. We fought over financial matters, especially when it comes to food since I provided food for my adult siblings as well. So, to him, I was spending his income unnecessarily. My husband is not a pure Bruneian so he doesn't have a big family here and doesn't understand the closeness I feel towards my siblings. Especially being the eldest and a woman. I'm used to taking care of my siblings even though they are old now. But now that all six of my children are working, they give me money each month. I can spend it however I want without having to ask from my husband or anyone else. I would say my life is better now as compared to before. All my children are graduates and are doing well in their careers. People look at me differently now because my children are so successful. They used to pity me as a housewife with no income and a husband who didn't make much. (Bulan, mother of six, grandmother of six)

Mawar talks about adult children providing financial support as part of their obligation to their parents in Islam. She claims that this was something she expected from her children and a conversation that she had with them before they started employment. As she and her husband were not highly educated, she too highlighted the fact that her educated children bring respect to the family. Her experience is an example of how economic and social capital are shared within a family network in Brunei.

All five of my children provide us with monthly allowances. We expect them to do this. They would be considered ungrateful children and it is a sin in Islam if they don't take care of us. Parents sacrifice a lot for their children in bringing them up. That's what all good children should do. My husband and I are not educated like them. I think in the olden days people looked down on us because we were not rich or well educated. We didn't have a luxurious lifestyle. But now that my children are all highly educated and have good jobs, people always praise me *about my children and how well off I am. We don't have to worry much financially in our old age and we live better than some others who were 'rich' previously. Because their children didn't get higher education, they cannot give parents money. Like my sister; her husband earnt quite well in his job before retiring, more than double what my husband earnt. They had several cars and ate out a lot, which was a trait of rich people back then. Now, I'm the one who has a better life than her, because none of her six children are university graduates. (Mawar, mother of five, grandmother of six)*

Selma also talked about her adult children's contribution as part of their filial duty, a key Asian value. Selma felt this practice is culturally expected.

Yes, my children give me pocket money monthly. The amount I receive varies from each child, depending on their salary and their financial ability. I think it's widely understood that children should take care of their parents when they are old. It is there in the religion and our culture. (Selma, mother of six, grandmother of nine)

The notion of reciprocity is also understood by aging parents and adult children as part of their obligations and responsibilities in Islam and Malay culture. In Islam parents are accorded an important position and it is stressed that children show kindness and respect for them in old age. This is one of the key family values instilled in children in their lives as part of an ideological system that guides social roles and ethics. It is one of the reasons why Malay Muslim societies invest in their children, as a means of support in their old age. This is important, as social policies generally do not undertake this role.

4.0 Conclusion

In Brunei, cultural norms still assert substantial influence in intergenerational co-residence through the expectation to fulfil 'family duties'. Hence, the relationship of family members and the practices they each undertake are vital in family function and support. Families determine the context of one's place in his or her social sphere, and provide a capacity for shared resources. While the goal within Western culture may be to develop children that eventually leave the home and become independent (Belcher et al., 2011), the interdependence of Bruneian families is reflected in the intergenerational support and shared family capital. This paper showed that intergenerational co-residence is still very much part of the existing Bruneian lifestyle. The relationships of family members living under one roof as well as their diverse practices are vital in family function and support. This study contributes to the knowledge on the mobilisation of family resources across generations influenced by values within Malay culture and Islamic religion. While these family supports mainly flow from elderly parents toward their adult children, reciprocity influenced by filial obligation within culture and religion is seen in monthly financial allowances given to elderly parents. Care work is the work of watching over and helping children as well as the elderly and other adults needing care, work that often is delegated to women and performed at home as unpaid work. (Ochiai and Malony, 2008, p. 13). Limited direct intervention by the government in childcare support—an issue of great importance to mothers who wish to work outside the home—means women have to make private arrangements to assist in their traditional roles as wives and mothers. It is grandparents and immigrant workers who fill the gaps in care work. From these findings, Bruneian families are still utilising grandparent support for childcare, mostly provided by grandmothers, emphasising the continuing gendered nature of care work.

Although this paper provided some evidence of intergenerational support in monetary and non-monetary forms within Bruneian families between elderly parents and their adult children, there are limitations to this study. The findings from the small sample of grandmothers (all of whom are Malay Muslims) may not be representative of the whole population. Therefore, further research with a bigger and more representative sample of mothers is suggested to investigate and provide further evidence on the nature of family capital in Brunei.

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Creating a Team of Eight Billion: Covid-19 Narratives and Scenarios

Sohail Inayatullah

Abstract

This article has four parts. The first part explores seven paradigms or discourses used to understand possible responses to COVID-19. These are: (1) Blame; (2) Disease and cure; (3) The next disease; (4) Beyond meat; (5) Leadership and climate change; (6) The end of capitalism; and (7) The new renaissance. Following these narratives, four macro scenarios are presented. These are (1) The Zombie Apocalypse; (2) The Needed Pause; (3) Global Health Awakening; and (4) The Great Despair. The next part moves from macro scenarios to meso scenarios, examining COVID-19 futures in the Islamic world and, as a national case study, Pakistan. These scenarios were prepared by experts during the last two years. The final part provides policy recommendations by exploring which narratives help us prepare for the future and which narratives hinder us.

Keywords: *Scenarios, COVID-19, Case Studies, Foresight, Futures Thinking, Pandemics, Narrative Futures*

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1.0 The Narrative Context

During the global financial crisis over a decade ago, the Financial Times (Yergin, 2009) reported that at its heart this was a narrative crisis. How you dealt with it depended on the story you used. Was it a mortgage crisis, a banking crisis, a geopolitical crisis of the shift to the Pacific (higher savings rates), a financial crisis, or even a crisis of capitalism (Inayatullah, 2010). Ultimately, a deeper crisis was eschewed, and Wall Street was saved at the expense of Main Street. China also helped to save the day, and all returned to normalcy. The window of a possibility of deep change did not materialize.

Humanity finds itself in a similar situation today even as the pandemic wanes in many parts of the world. As during the French Revolution, time is plastic, we have entered uncharted waters. Once the crisis nears its end – as it becomes endemic, more predictable and manageable - many will be tempted to go back to the world we knew. However, this is also the opportunity to create a different world. As biosecurity expert Peter Black summarizing Arundhati Roy, "Historically, pandemics have forced humans to break with the past and imagine their world anew. This one is no different. It is a portal, a gateway between one world and the next" (personal communication, 6 April 2020).

What we – as a species, as a global community, as individual actors - do will be decided by the narrative we use. How deep do we wish to go, how much do we wish to change? Here seven paradigms, or discourses, to understand the possible responses to Covid-19 that may play out are presented. Each one takes a different perspective on who "we" are and what "we" should do.

1.1 Blame Game and Con-Spirituality

In this narrative, the goal is to use the pandemic for political points, to hold on to and extend power (Inayatullah, 2020a). Thus, in India Modi and his cronies have blamed Muslims. In the USA, the former American president Trump and his associates called it the Kung-flu, the China-virus. Instead of a focus on global solidarity – we are all in the same storm, though different boats – the focus has been on division. Equally significant has been the rise of the conspiracy movements, largely prevalent on the extreme right and the spiritual left. Feeling powerless and believing in over-inflated agency (Milojević, 2020), they create grand theories where there is a secret elite – often Jews - who have created the virus for unknown purposes. In both approaches, it is political point scoring that comes first. This is often done to win elections.

1.2 Disease and Cure

However, if COVID-19 is a global health crisis, i.e., a disease crisis, then the answer is easy: find the cure and the vaccine. Ensure open science, the free flow information, and find medical solutions. The main insights will be that global science - the free flow of information - working together can create the difference. As a Spanish biological researcher commented: “You give the footballer one million euros a month and biological researcher 1 ,800 euros. You are looking for a treatment now. Go to Cristiano Ronaldo or Messi now and they will find you a cure” (*Reddit*, 2020). Science and technology with predictive artificial intelligence and innovative companies lead the way. The swift global response has shown how effective this discourse is with numerous vaccines released in 2021 and 2022, and more to co. Indeed, recently even a patent-free inexpensive vaccine has been invented (Oaten, 2022). Brunei has successfully focused on this approach.

1.3 The Next Disease

While this resolves the short and medium range future, what happens when a similar zoonotic disease erupts? To meet increasing demand, wildlife is being sourced from more and more remote patches of the planet that humans have disturbed (i.e., land use change) to satisfy resource consumption needs at the broadest level. More erratic excretion patterns of viruses follow, coupled with mixing of species that increase the risk of so so-called ‘spill over events’ that manifest more as a food consumption crisis. Required here is the banning of wet markets and of eating of exotic animals. It also means challenging masculinities in East Asia and the search for exotic alternative health potions. But mere legislation will not solve the day. Decision-makers need to ensure that those trading in these lucrative areas - the bounty hunters - find new work; otherwise, the trade will just go underground. This again is not just a Chinese national issue but one requiring a global coordinated effort. It will require Interpol to begin to shift toward becoming Earthpol.

1.4 Beyond Meat and City Design

Perhaps this is more than just a zoonotic crisis. It is not just wildlife that is the problem, but our consumption patterns. Many blame factory farming and warn that the next pandemic will emerge from how we produce food. Hence, there is a need to redesign cities and what we eat so we do not encroach on wildlife areas. We also urgently need to change our relationship with meat. While challenging meat may be too much for many, the current production models certainly need to shift. Meat is not just about what we consume but the broader pattern of industrial food production. While one solution is to ensure the boundary lines between human habitat and wildlife settlements are respected, another is to develop cellular agriculture. Food then is grown in scientific labs initially and eventually with 3d printed food, food becomes essentially software (Brunton, 2020). The implications for this shift are enormous. Writes one forecaster:

> *The cost of proteins will be five times cheaper by 2030 and 10 times cheaper by 2035 than existing animal proteins, before ultimately approaching the cost of sugar. They will also be superior in every key attribute – more nutritious, healthier, better tasting, and more convenient, with almost unimaginable variety. This means that, by 2030, modern food products will be higher quality and cost less than half as much to produce as the animal-derived products they replace. By 2030, the number of cows in the U.S. will have fallen by 50% and the cattle farming industry will be all but bankrupt. All other livestock industries will suffer a similar fate, while the knock-on effects for crop farmers and businesses throughout the value chain will be severe (Wang, 2019).*

1.5 Leadership and Climate Change

We now know that global focus is possible. Global coordination is possible. Solutions unimaginable months ago are now the new normal. This crisis can be seen as a pre-run, a mock trial, preparing us for the real event - climate change. Some of the drivers for the zoonotic disease challenge, such as land use change, are also directly related to climate change. What we learn today, or the changes we need to make today, can be crucial for the world we create. Thus, this crisis is essentially about leadership. Can we ensure the shift to a greener planet? This means moving toward solar energies and ending the fossil fuel era. The People's Republic of China has recently been forecasted to meet its carbon goals nine years earlier than planned under the Paris agreements (Vaughan, 2019). "As China moves towards a higher tech and service economy, it is likely to show how the passage to a low-carbon economy and robust and sustainable growth in an emerging market economy can be mutually supportive," says Nicholas Stern, of the London School of Economics (ibid).

1.6 The End of Capitalism

As parts of the world enter a severe recession, or a seven-year malaise, possibly a global depression, the real issue is economic. Not just COVID-19 but climate change and now the war in Ukraine all create this possibility. Creating a world where "money keeps on rolling" and not getting stuck in the hands of a few becomes urgent and imperative. This is a world where global solutions are focused on equity and prosperity. This is a future where universal basic income, free education, health, and housing for all are not solely concern of the left, but required for global security. There is thus a need to challenge the world capitalist system with its mantra of "more, more, more for the few. " In this scenario, uneven development distorted by deep global inequity is not allowed to continue. Capitalism dies: progressive individuals help it disappear. Most likely this will mean three economic spheres, as argued by P. R. Sarkar (1987), the founder of Proutist Economics: global cooperatives, globalized industries and markets. It will require global governance if not global government. For many, this means surveillance and the loss of individual liberties. For others, this means the end of identity based on whom one hates and other imagined realities. It means accepting that we are human beings first. Innovative technologies create stunning wealth for all.

1.7 The New Renaissance

This then is a much deeper crisis and challenge. The novelist Arundhati Roy writes:

> *Historically, pandemics have forced humans to break with the past and imagine their world anew. This one is no different. It is a portal, a gateway between one world and the next. We can choose to walk through it, dragging the carcasses of our prejudice and hatred, our avarice, our data banks and dead ideas, our dead rivers and smoky skies behind us. Or we can walk through lightly, with little luggage, ready to imagine another world. And ready to fight for it (Roy, 2020).*

In this narrative, our view of ourselves as material beings is being challenged. We can either panic or go deep within and mindfully find peace. Our view of ourselves as defined by the nation-state is being challenged. Viruses do not care about boundaries, nor does nuclearisation bring safety. Our view of ourselves as outside of nature, as separate from Gaia (Jones, 1997), is being challenged. Our view of ourselves as defined by economics alone is being challenged. More and more will recognise and identify the delusion of endless economic growth, i.e., the single bottom line.

The deep challenge lies in fixing the great imbalance. In our four spheres of life: economy, society, spirit and nature, we have overly favoured one at the expense of others. We need a great Gaian rebalance, moving to a world with a quadruple bottom line: Prosperity, Purpose, People, and Planet (Inayatullah, 2017). COVID-19 can help us create a new Renaissance - a transformation of self and society, home and planet (Inayatullah, 2022). There have been two historical renaissances. The Asian Renaissance was personal: the quest for inner peace, enlightenment, the utopia of the mind. The European Renaissance challenged dogma, allowing science and art to flourish, creating the possibility of revolution after revolution against authority that does not the utopia of the material world.

We are in a similar process now. However, after enough of the world population is vaccinated, there will be a push to go back to what we know, the used future. If we are not careful and purposeful, it will be a pause followed by the pursuit of light-speed economic growth—back to where we were. Gaian leadership at this time is about charting a new direction, exploring scenarios, and creating global systems that help us arrive at a new future.

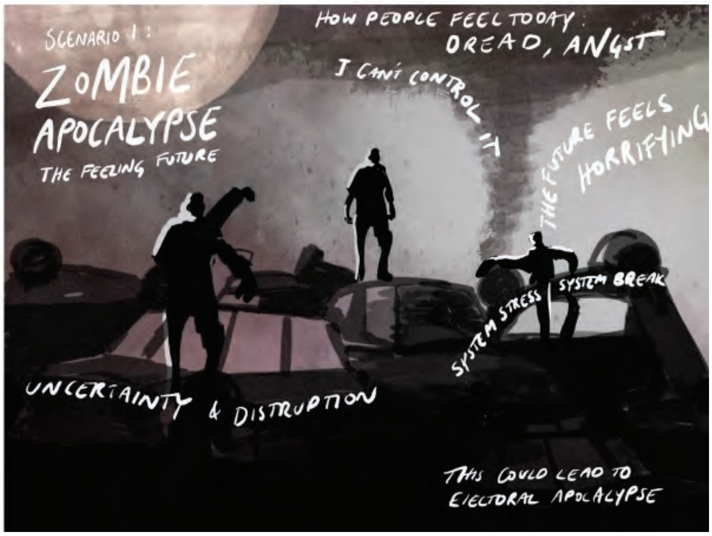
2.0 The Scenarios

While the above presents narratives that help us understand what will emerge, the complexity of information, the uncertainty of what is next suggests that the futures methodology of scenario writing is more appropriate for understanding what is next.

Based on research with biosecurity expert Peter Black (*Campaigns*, 2022), and written in March 2020 at the start of the pandemic, four scenarios were offered as a way to map the emerging future. Images by illustrator Charmaine Sevil are provided as visual references for each scenario.

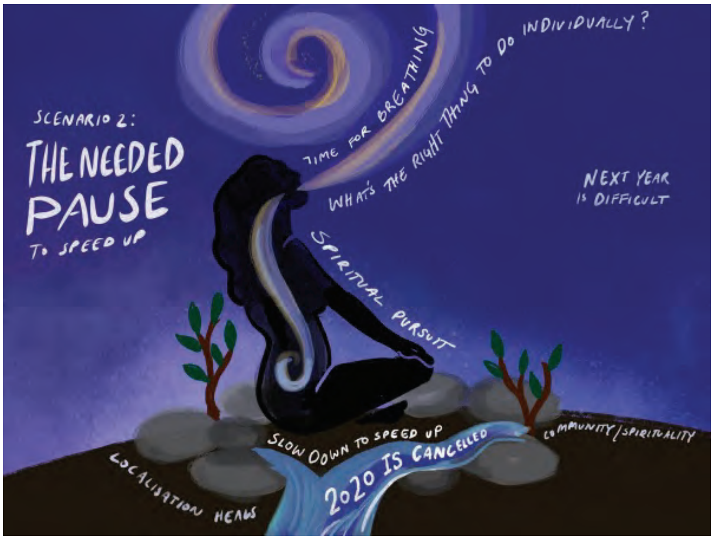
2.1 Zombie Apocalypse

This future emerges because of the mutation of the virus plus xenophobia plus panic. Uncertainty leads to continued market crashes. Supply chains, tourism, travel and conferences are all disrupted. A severe and long-term recession, if not depression, results. Failure to act leads to a number of regime changes, as in Iran and the USA, to begin with. Wherever there are system stresses, they break. This is certainly how the future feels to many. The memory of earlier plagues remains at the inter-generational level. Fear and panic rule.



2.2 The Needed Pause

Efforts have been made in most countries to ‘flatten the curve’ to help health systems cope. In the future, COVID-19 becomes just another winter flu – dangerous as it is for the elderly and those who smoke. It is, however, solved and routinized within a few years through vaccines. Global efforts and Big Pharma ensure that by the end of 2023 most people in the world have been vaccinated. In the meantime, the frenetic pace of everything slows down, with multiple benefits to the planet and personal health. Greenhouse gas emissions fall, for starters. Over-touristed cities like Venice get a break. Localization heals. People focus on their inner lives. More and more people meditate. For a short period working from home becomes the norm. However, states still do not support employees in this process as trust is a factor. Thus, after the pause, it is back to business as usual. We slowed down in order to speed up again.



2.3 Global Heath Awakening

Large AI companies, science, start-ups, and public health expertise come to the rescue. We truly enter the digital fourth wave era – genomics plus AI help monitor and then prevent. The five ‘p’ health model – prevention, precision, participation, partnership, and personalization become the norm. There is breakthrough after breakthrough with innovation (real time detection, health monitoring using big data) cascading through the system. While the virus began in China, the nation leads in innovation as it is forced to adapt. Toynbee’s creative minority via open-source science and technology lead the way. Working from home booms as new relationships between employer and employee are created. Universal basic income is supported as the strength of society is based on how we treat the weakest; not how we glorify the strongest. Young people are no longer the future, but the present. This is the disruption that truly creates the fourth industrial revolution. Along with external innovation there is inner innovation – a social revolution. Evidence-based science and technology inform public policy; not the whims of particular leaders. The insights from fighting Covid 19 are applied to climate change. There is a dramatic shift to plant-based diets. It is business transformed, social mutation (Tanner, 2020), not back to usual. There are, however, concerns about privacy.

For organizations, traversing these uncertainties there is a shift to wellbeing. In schools, this is for staff, students, and administrators. As one school leader writes:

In this future, four dimensions would be crucial:

- The culture of wellbeing would be paramount
- Flexibility – develop the capacity for variation
- Collaboration – retain new capacities for collaboration and this process to build a sense of community
- Personalize learning – develop pathways to enhance this through engagement (Inayatullah and Roper, 2020).

The image of this future is as follows.

2.4 The Great Despair

Not an apocalypse, not a depression, no magic – just a slow and marked decline of health and wealth. Walls appear everywhere. The World Health Organization and others try to contain it, but virus repeatedly slips in and infects the bodies, minds, and hearts of all. This is similar to the European Middle Ages, a return in time. The efforts to address the problem fail. The least connected to globalization fare the best. The vulnerable are forgotten. Inter-generational memory of past pandemics inform strategy.

3.0 From Macro to Meso

While these are general scenarios, in the following section we focus on implications for aspects of the region: the Islamic world and then for Pakistan.

3.1 COVID-19 and The Islamic World

For the Islamic world, research conducted in 2020 with Khadija El Alaoui and Muamar Salameh (2020) suggests four scenarios: (1) The changing of the guard; (2) The revolution of the youth; (3) Hold the line; and (4) The new planetary Ummah.
I present these scenarios next.

3.1.1 The Changing of The Guard

The pandemic creates a seismic change in the geopolitics of the region: Iran sinks - its leadership claims disappear. Saudi Arabia loses its status as the protector of the Holy Sites and the pilgrims due to border closure. Its legitimacy is further weakened by the steep drop in oil prices. There is a power vacuum. It is far from clear who leads the Islamic world. As the western world reels from a seven-year depression and oil-exporting nations succumb to waves of poverty, nations which are not saddled with the resource curse rise. Will it be Turkey? Indonesia? Or Malaysia? The core metaphor for this future is: “Behind every dying Caesar, there is a new one.”

3.1.2 The Revolution of The Youth

The pandemic – in addition to crises caused by climate change in the decade ahead - results in great decimation, especially in territories already suffering the politics of unelected leaders. Vaccines are not equitable, only wealthy nations reach target levels. As well, the virus keeps on mutating becoming more and more deadly. Or a new virus emerges. Poverty and ill-equipped health services with a lack of preventive action eventually lead to millions of deaths in the Islamic world. Acceptance instead of a transformative strategy becomes the norm. As one Pakistani guard commented: “What can we do about the Coronavirus? One can die of a heart attack. Death is inevitable and it could come at any time. COVID-19 is but the will of Allah” (Shams, 2020).

3.1.3 Hold the Line

Powerful nations in the Islamic world safeguard as much as they can of their power and influence, given the instability in the world economic system. They do their best to continue the status quo. Fearing the revolution of the youth, they offer economic aid to poverty-stricken Muslim nations led by governments perceived as allies. In an attempt to preserve the status quo, the pandemic is used to suppress any form of dissent. Preventive measures are implemented in the name of public health; yet they serve the purpose of deepening control over the population. The metaphor is: still chained to the past.

3.1.4 The New Planetary Ummah: Science and Spirit

Research in the late 1990s (Hasan, 2002) reveals a shift in the Islamic world: the Ummah with capital U has shown signs of moving toward syncretic Islam. This shift was noticed by Bin Laden and others, who worked hard to end it through bringing believers back to the Wahabi fold. They failed. Fed up with geopolitics, ruthless leaders, and false clerics, Muslims dive deep into spirit. Rumi and his teachings become more important than ever. The Islamic renaissance of science and spirit leads the way in a post-pandemic and post-depression world. This is the most idealistic scenario. The metaphor is: Call me by my true names.

What is clear from these scenarios is that COVID-19 is seen as a foundationally disruptive event. It continues the process of the Arab Spring in its potential for change. However, inertia and the lack of willingness of the elite to change is as likely and thus we see a future of “Hold the Line”. However, the other three scenarios suggest change, either geopolitical change as in “The changing of the guard,” demographic change as in “The Revolution of the youth, “ or in the dramatic, “The New Planetary Ummah: Science and Spirit.” As these are scenarios, it is generally inappropriate to speculate which scenario is more likely. However, with an easily available vaccine (and milder variants such as Omicron) then youth revolution is unlikely, and we will return to “Hold the Line.” Nonetheless, the seeds of the New Planetary Ummah are there, and this scenario is like the imagination of a Global Health Awakening.

3.2 COVID-19 and Pakistan

While the first meso approach focuses on the Islamic world, this case study develops scenarios for Pakistan. These are (Inayatullah et al., 2020):

3.2.1 The Saviour

In this first future, it is the external - another nation attacking or saving - that is paramount. Once it was the USA saving Pakistan. Now it is China with its face masks and public health strategies (Gannon, 2020). A year from now it will be China that helps Pakistan recover from financial collapse. The International Monetary Fund will come to the rescue later. Five years from now, it may be a different country. But Pakistan will remain the child, always waiting for the elder to save him/her.

3.2.2 The Revenge

In this second future, there is a backlash against the religious right. Their insistence on continuing to violate public policy health directives, believing for example that “It is all in the hands of Allah ... we should fear God, not a pandemic” (Khan, 2020) leads to public sentiment against them. Eventually, the religious right is forever banished to a peripheral role in politics. Progressive values once again take hold; it will no longer be fact versus faith but a nation focused on science, technology, and inclusive economic development.

3.2.3 Everyone in a Different Direction

Pakistan's vision of the future is not sure - identity is all over the place. Me, myself and my tribe is most likely to dominate the agenda, the struggle will be strong, and the fragmentation of intentions real. Over the next few years, there are riots throughout the nation as poverty worsens and conflicts between the religious right and others increase. This will most likely lead to direct military rule, a return to the civilian--military pendulum of governance (Inayatullah, 2020b). The military will impose law and order. This will continue over the next few years. Looking back, Pakistan's response was "too little, too late." Power politics, poverty and traditional ways of seeing the future were all complicit.

3.2.4 Techno-Pakistan and The Awakening

In this future, written by futurist Puruesh Chaudhary, "the young make a massive push towards the digitalization of the economy. The 4th Industrial Revolution creates real change. Entrepreneurs and small business owners increasingly rely on using technology to enhance productivity and consumer experience, setting a better balance between work and life. This group of energetic young Pakistanis enables meaningful economic opportunities. 5G technologies create more jobs. They are not only leading a movement on flattening the curve, but also paving the way for a future-centric ecosystem. Baby boomers and Gen X see the shift and join the bandwagon. Notions around platform cooperativism gain momentum. Ministries and regulators start using a systems-based approach to integrate databases for anticipatory governance. Imagination and creativity become the core function for all future R&D investments" (Inayatullah et al., 2020).

As with the scenarios on the Islamic world, there is an extreme positive scenario driven by technology and the youth revolution, and a pessimistic scenario where there are battles between all factions.

However, suggests Umar Sheraz, what is needed is a narrative shift (ibid). He writes:

"The foreseeable future will be driven by these two narratives of opportunity and once a narrative has taken hold they can be very difficult to shake off, at least until an even more compelling counter-narrative is introduced. Instead of war metaphors, there are other narratives which are much more useful for us in thinking about our preferred future. We could talk about the 'Coronavirus movement', similar to the Pakistan movement which united all and sundry towards a common goal and cause. The other change in

> narrative could be putting “Pakistanis before Pakistan”, instead of the other way round. ‘Opportunity’ needs to be replaced by possibility, to accommodate other world views, experimentation and backup plans in case of failure. The goal would be to make a post-corona Pakistan more humanitarian, rather than a victim of opportunistic wish lists. There is already a narrative that says that Pakistan is considered one of the most generous societies in the world - what is called the Law of Generosity. “We Pakistanis believe that one good deed begets another, and perhaps our generosity will spread faster than the virus. Armed with the unwavering belief that humanity at large will benefit, we are trying our best to provide a cushion to those who need assistance – and hope to those who need hope” (Imtiaz, 2020).

This then links us to the final section, narrative and COVID-19.

4.0 Policy Recommendations: Preparing for the Future

Clearly while there are many lessons from COVID-19, the most important one appears to be being prepared for the future. In the case of Brunei, preparation has been effective. Writes the World Health Organization (2021):

> *Brunei Darussalam completed a joint external evaluation in collaboration with WHO and international experts at the end of 2019. The aim of this exercise was to enhance core capacities to prevent and respond to public health emergencies, disease outbreaks, and other hazards including from chemical, radiation and natural disasters. When the first case of COVID-19 in Brunei Darussalam was detected on 9 March 2020 in Tutong district, the country was able to mount a strong response based on solid surveillance and robust epidemiological analysis. The government has been vigilant and acted in accordance with WHO guidance to find, isolate, test and treat cases; and trace and quarantine their contacts, while also implementing robust border control, communication activities and community engagement. Brunei’s health system is resilient and the rapid response to COVID-19 is a testament to collective efforts, both nationally and internationally.*

Returning to narrative, what metaphors and stories can help us move from being unprepared to being more prepared for the future?

In a lengthy analysis from futurist Ivana Milojević (2021), she divides these narratives into four groups across two variables, those that hinder and those that assist.

The four levels derive from the futures methodology, causal layered analysis (Inayatullah and Milojević, 2015). In this approach, level one reality are headlines, statements of truth. Level two is the systemic basis for these headlines. Level three is the cultural or worldview basis of these systems. Finally, at the deepest level are myths and metaphors.

The following table illustrates these narratives.

Table 1.

	Lack of preparedness	Improves preparedness
LITANY	• Acts of God • Nobody knew • The next big one • Who would have thought? • Never before	• Man vs microbe • Only a matter of time • Act now • Time is running out, use it wisely • As certain as death and taxes
SYSTEM	• Only those with pre-existing conditions • Let it run • Herd immunity • Just the flu • Panic or neglect	• Syndemics • Infection free utopia • Awaiting the vaccine • New disease: new approach • Ever vigilant
WORLDVIEW	• Not me, not us • Natural selection • Survival of the fittest • Battlefield	• All of us are vulnerable • All lives matter • Germ theory • Complex adaptive systems
METAPHOR	• China virus • Kung flu • Nation as organism • The boy who cried wolf • Out of sight, out of mind	• Coming together • Same story, different boats • Viruses know no country • Responding to signals amidst the noise • All in this together

This table confirms the earlier narrative analysis, i.e., that blame does not help us prepare.

At the litany level, the statements in texts focus on the shock, the lack of preparedness. These headlines are not helpful, suggests Milojević. In contrast are different types of litanies, such as "act now," or instead of "never before," we should assume that pandemics are as normal and certain as "death and taxes."

At the systemic level, are broader statements such as "herd immunity," which again does not help us prepare. It is better for us to focus on creating a vaccine. Or take the popular statement that this is normal for health systems, i.e. "just the flu." In contrast, suggests Milojević, we shift to a systemic approach where we see COVID-19 and subsequent pandemics as novel and in need of new approaches, i.e., this is not just the flu. Instead of systemic panic or having systems that continue human encroachment in wildlife areas, we need to be “ever vigilant” and ensure socio-technical systems are “ever vigilant.” In the case of Brunei, the system strategy that has been somewhat successful has been the whole of government approach (Hamdan and Case, 2021).

At the worldview level, perspectives such as natural selection or survival of the fittest or “not me, not us,” again are not helpful in being prepared for the future. In contrast are worldviews that focus on germ theory, “all lives matter” and “all of us are vulnerable.”

At the deepest level of metaphor, the “China virus” or “Kung flu” story, while gaining cheap political points, do not help to create worldviews, systems and litanies that can help us prepare. In contrast, suggests Milojević, are stories such as “coming together,” and “same storm, different boats.” And significantly, instead of “Out of sight and out of mind,” Milojević suggests, “All in this together.”

This confirms the earlier argument that what is needed are scientific narratives that are deeply inclusive. If we examine New Zealand, the Prime Minister was decisive, used science and WHO strategies and ensured that she had an overall narrative, what she called,” A team of six million” (Smith, 2020).

Thus, there are four levels of policy recommendations. First, pandemics will continue to emerge, and we need to prepare for them, as well as reduce the changes of them spreading. Second, organizations such as the WHO need greater powers to prevent and respond to pandemics and ensure systemic changes are implemented and enforced. Third, there needs to be a worldview shift focused on complex adaptive systems and the One Health (U.S. Department of Health and Human Services, 2021) approach– humans, animals and nature. Fourth, there needs to be a shift in the narrative, the story.

Thus narrative, as we have argued throughout this paper is decisive in which futures emerge and which do not.

Narratives finally must be linked to changes in the empirical world. This requires using the thought capital from COVID-19 to create a portal into a world where we use the future to enhance equity, green cities and communities, and use new technologies to reduce the workloads of all. Ideally, this moves us from the chains of the factory model (the dominator model of social relations) to one where the person in the context of community and nature - as a worker, as a student, and as creator - is at the centre. This is the partnership future cultural historian Riane Eisler (2007) imagines. In the case of Brunei, leadership created a narrative that linked deep culture (we will succeed through prayer) and science (prevention efforts, lockdowns, vaccination programmes (*Brunei to distribute*, 2022) improving access to vaccines (Haris and Bandial, 2022), and health transparency (Hamdan and Case, 2021).

This essay closes with a warning, i.e., COVID-19 may be a portal to a new world, but it is certainly a warning, a storm warning to prepare for a dangerous world ahead and do our best to ensure that the Age of Pandemics is short lived (Inayatullah and Roper, 2020). While the recent Omicron variant is mild, the virus continues to spread, and critically global vaccination levels remain low. With climate change continuing to be a major creator (and threat multiplier) of new pandemics, the future does not bode well. Thus urgently, following New Zealand’s narrative of a team of six million, it is certainly time to imagine and create a planetary team of eight billion. In this future, the lessons learned from rapid innovation in vaccines and the earlier lack of moving from preparedness to global action are used to not just ensure humanity is ready for the next pandemic but to do our best to prevent a global pandemic.

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