

CAREC INSTITUTE RESEARCH CONFERENCE

4-5 March 2021

Session Three

Tourism Sector in Times of High Uncertainty

Chair: Dr. Qaisar Abbas

Chief of Research Division, CAREC Institute



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Tourism Sector in Times of High Uncertainty

Speaker: Dr. Madina Junussova

Senior research Fellow, Institute of Public Policy and Administration, University of Central Asia, Kyrgyzstan



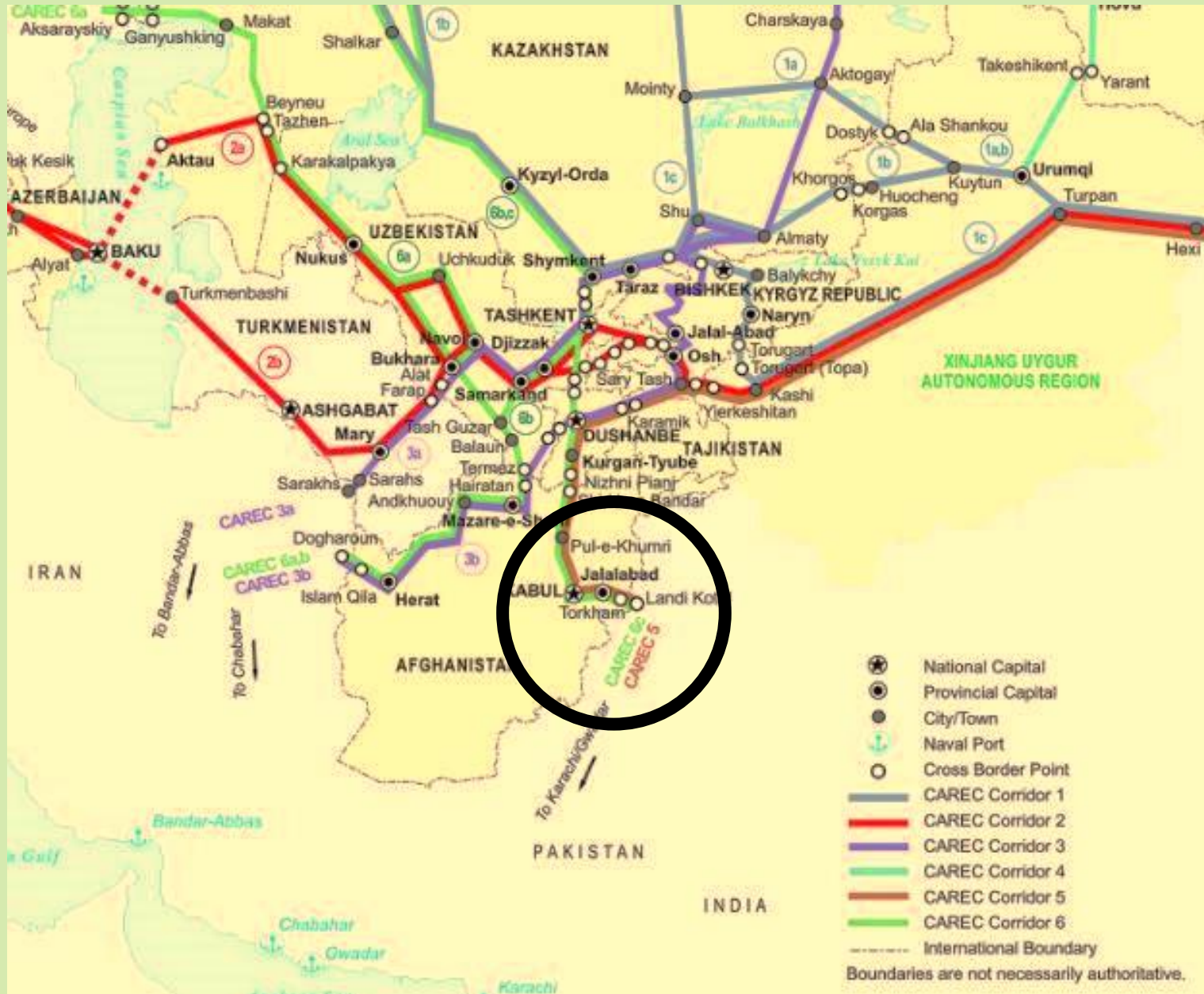
COVID-19 IMPACT ON THE SUSTAINABLE DEVELOPMENT OF CITIES OF CENTRAL ASIA: THE CASE OF KABUL

Madina Junussova,

Senior Research Fellow, Institute of Public Policy and Administration, University of Central Asia

Saniya Soltybayeva,

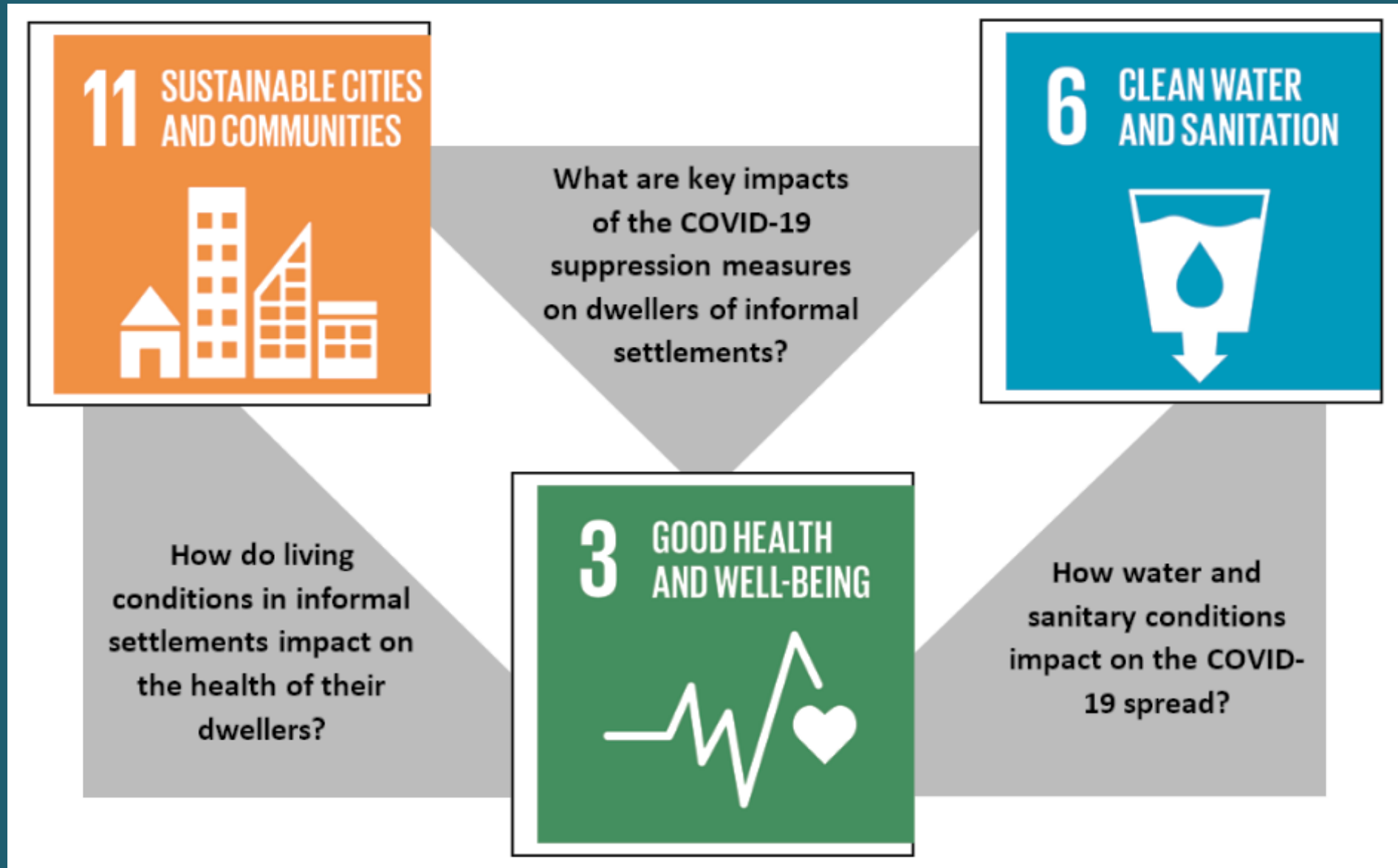
Research Fellow, Economic Research Institute, Ministry of National Economy of Kazakhstan



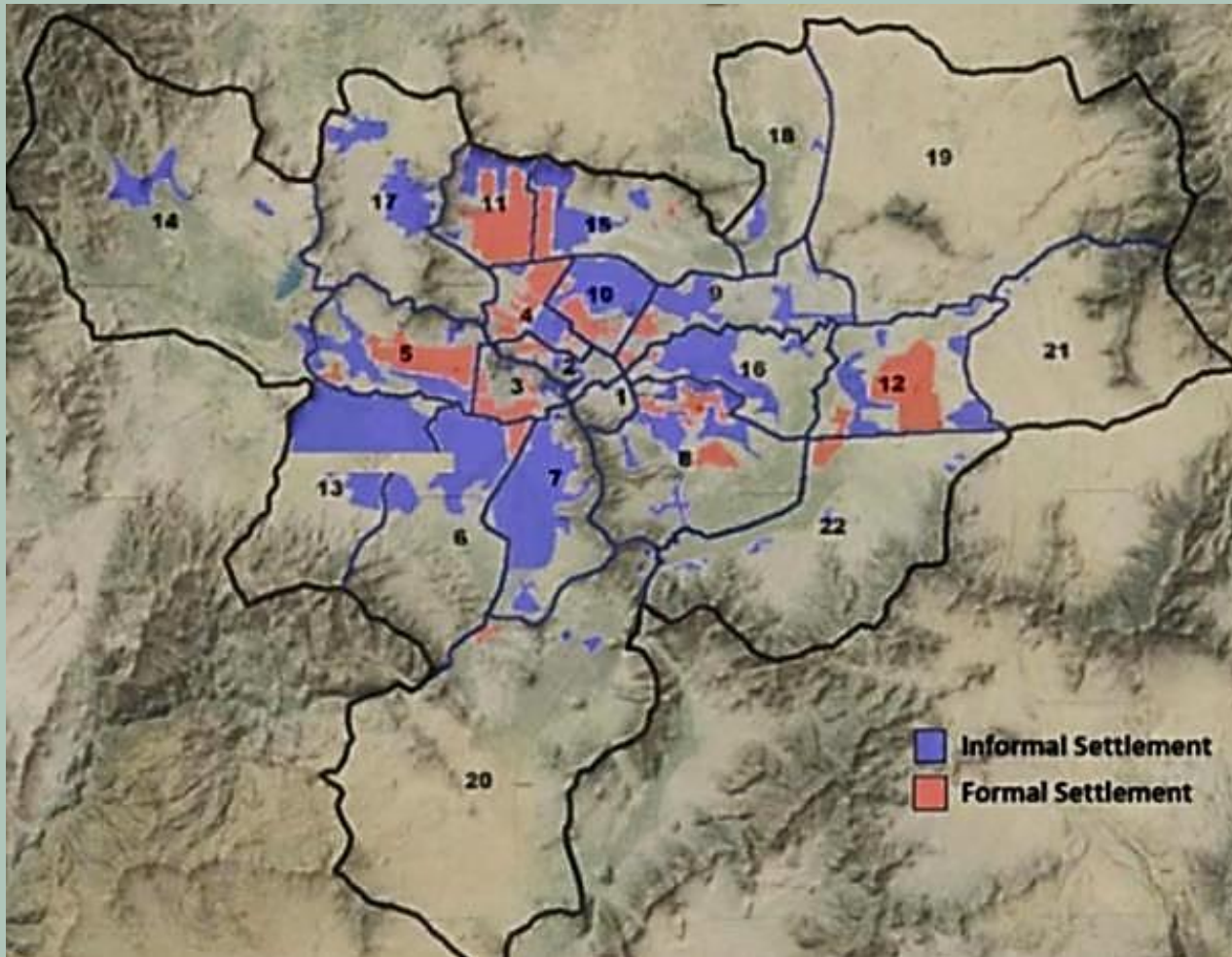
The aim of the study is to assess the urban development of Kabul, focusing on two critical components of sustainable and healthy living revealed by the recent COVID-19 pandemic:

- Urban hygiene and access to water and sanitation;
- Access to housing, land, and property rights.

THEORETICAL FRAMEWORK



INFORMAL SETTLEMENTS IN KABUL



- ▶ over 6 million people, approximately 70% of city residents of Kabul, live there with high uncertainties due to weak land rights, low quality housing, and vulnerability to natural disasters;
- ▶ more than 80% of urban residents struggle with access to potable water;
- ▶ the informal settlement's population comprises urban poor, rural migrants, returned refugees, and other people displaced by conflicts or disasters.

THE COVID-19 IMPACT ON RESIDENTS OF KABUL

- The lockdowns, closure of markets and social spaces left the urban poor without the opportunity to earn and afford living even in an informal setting.
- The implementation of handwashing became impractical for informal settlements that do not have adequate access to clean water and poor sanitation.

THE COVID-19 IMPACT ON RESIDENTS OF KABUL

- The social distancing or self-isolation is a luxury for the urban poor living in the densely populated informal settlements, sharing access to basic infrastructure.
- Informal settlements with poor sanitary conditions can become the main hot spots for transmitting the virus to the other parts of the city.

THE MAIN POLICY CHALLENGES IN KABUL'S INFORMAL SETTLEMENTS

- The government and donors continue to be reactive and fighting with the consequences.
- Most government and donor interventions are limited to the simple supply of basic infrastructure, whereas nothing is being done to promote social and behaviour change.
- Many projects' delays were caused by the lack of sufficient technical and managerial capacity and inadequate distribution of roles and responsibilities among key actors.
- There is a lack of reliable data about people residing in informal settlements. There is no documentation of health issues or other evidence to understand the COVID-19 transmission dynamics level.

POLICY PRIORITIES IN INFORMAL SETTLEMENTS

- Policy actions must be evidence-based and rely on sound research to fill the data gap about people living in informal settlements.
- Planning interventions should not be expensive and applicable to the local situation.
- There is a need for an integrated approach to all development dimensions of informal settlement living.

POLICY PRIORITIES IN INFORMAL SETTLEMENTS

- The national government should invest in the Kabul city government's capacity to engage in local partnerships and incentives to cooperate with local stakeholders.
- Local strategies should focus on dwellers by not giving or delegating but sharing responsibilities and working together.

THANK YOU FOR YOUR ATTENTION!

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Tourism Sector in Times of High Uncertainty

Discussant: Mr. Ayoob Ayoobi

Chief of Capacity Building Division, CAREC Institute



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Tourism Sector in Times of High Uncertainty

Speaker: Dr. Nam Foo

Research Associate, School of Business and Law, Edith Cowan University, Perth / Lecturer, Curtin University, Perth, Western Australia



Recovering from the Impact of the COVID-19 Pandemic on the Tourism Industry in Selected Central Asia Regional Economic Cooperation (CAREC) Countries

by

Dr. Nam Foo

Edith Cowan University

Perth, Western Australia

1. Introduction

- Central Asia (CA) has been a bridge between Europe and East Asia – the Ancient Silk Road.
- The region attracted approximately 11 million international arrivals in 2014 (The World Bank, 2017).
- The tourism and hospitality industry has been one of the worst-hit sectors.
- The health crisis has caused approximately 700,000 travel and tourism jobs are at risk (Sobie, 2020).
- CA governments have made substantial interventions and adopted appropriate economic policy measure to support the service industry.

2. Genesis

- Investigates the impact of the COVID-19 pandemic on the tourism industry in the CA region.
- Assesses how the pandemic may change society, the economy, and tourism in CA member states.
- Outlines key research requirements and recommends useful government recovery plans.

3. Research Questions

- How significantly does the pandemic affect the tourism industry?
- Should the CA governments do better to implement the recovery policy? How?

4. Synopsis (1)

- The tourism industry has become one of the symbolic features for CAREC member states since the post-Cold war.
- The CAREC countries enrich of their natural and cultural heritage as well as their historical and build assets.
- Fig. 1 illustrates the international tourist arrivals in the CA region.

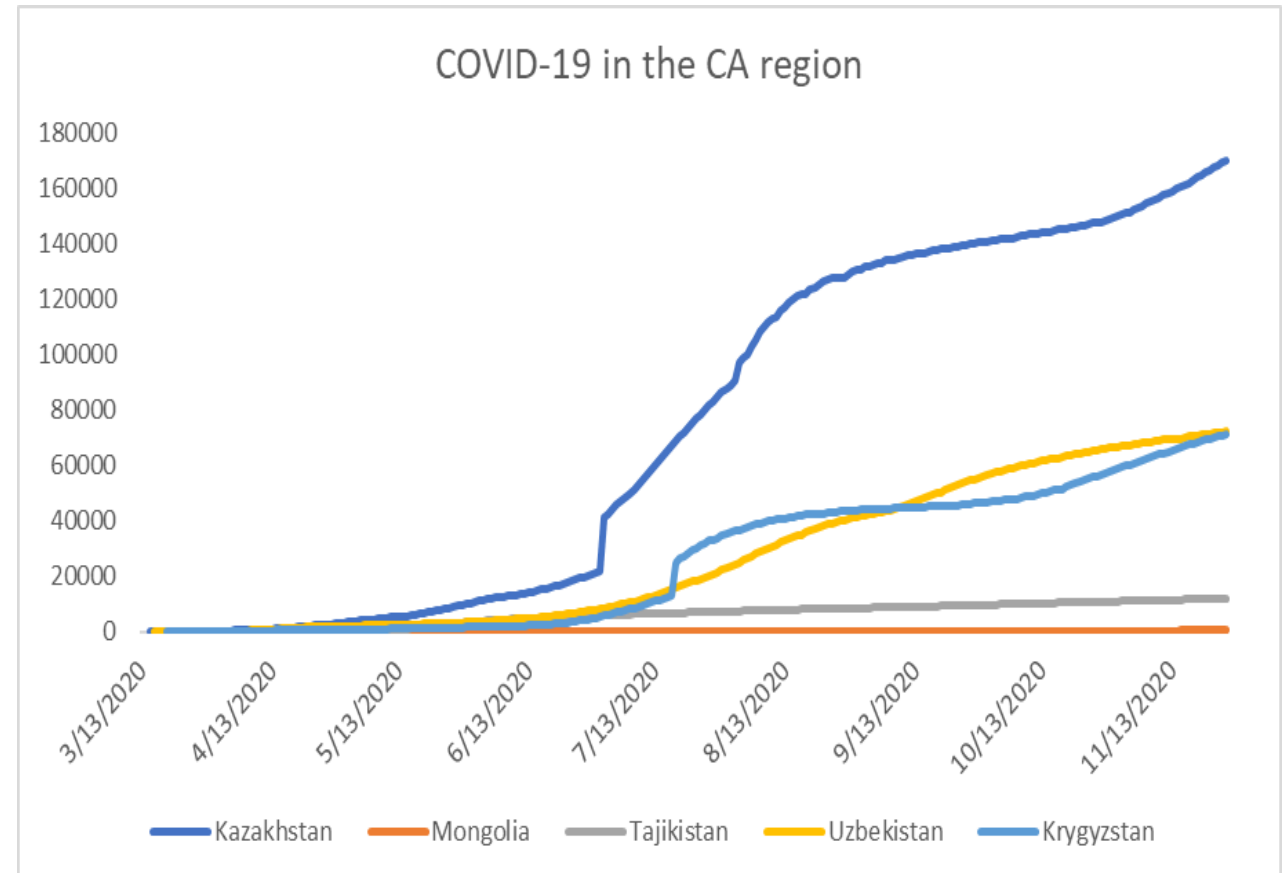
Figure 1: Total number of international tourist arrivals in the CA region



4. Synopsis (2)

- The outbreak of the COVID-19 has brought uncertainty, and a spillover impact on all sectors.
- The international travel service providers in this region are in a dire position.
- Fig. 2 explains the COVID-19 cumulative cases in CA countries.
- Limited research in the COVID-19 and tourism and hospitality related studies (Aburumman, 2020; Davahli et al., 2020; and Jamal and Budke, 2020).

Figure 2: The development of COVID-19 in CA (as of 11/26/2020)



5. Data and Methodology (1)

- A quarterly panel regression model from 200q1-2020q4 was applied.
- Following the study by Tran et al., (2020), the model is written as the following:

$$Y_{it} = \alpha + \beta'X_{it} + \mu_{it} \quad (1)$$

- where i and t represent indexes of the individual country and the time.
- Y is international arrivals
- X is a set of independent variables, for example, the number of confirmed cases (*conf*), the number of total deaths (*cond*), as well as other control variables, including population density (*popden*), GDP per capita (*GDP*), cost of health—out-of-pocket health expenditure—(*health*), the total number of hospital beds per 1,000 people (*capacity*), and the total number of health workers—nurses and midwives—per 1,000 people (*nandMW*)
- μ_{it} is the error term

5. Data and Methodology (2)

- In the panel regression, the empirical model was given in a natural logarithm, written as the following:

$$\ln Arrivals_{it} = \alpha_0 + \beta_1 \ln COVID_case_{it} + \beta_2 \ln Control_{it} + \mu_{it} \quad (2)$$

- The number of COVID-19 confirmed cases (*COVID_case*) and deaths are considered to be major pandemic-related variables. This variable *COVID_case* is the main explanatory variable.
- The sample data was collected from January 1 to December 6, 2020
- Our World in DATA, The World Bank, WHO, UNWTO's Tourism Statistics and Worldometers

6. The analyses (1)

- The study applies two estimation models. (1) pooled ordinary least square (OLS) and fixed effects (FE). See Table 1.
- The empirical study finds a promising outcome of COVID-19 and tourism flows in the CA region.
- The study finds all the variables of COVID-19 are significantly related to international tourist arrivals.
- The arrival of international tourists can impact the country's COVID-19 confirmed and death cases.
- The study finds that the health variable has a significant p-value.
- The result indicates that low income and least developed nations' citizens more likely to suffer a high number of deaths from the pandemic.

Table 1: Estimation results of panel regression models

Dependent variable: arr	OLS		FE	
GDP	1,357.55** (93.360)	14.54** (0.000)	470.876** (77.253)	6.100** (0.000)
popden	27,0371.9** (10,873.770)	24.86** (0.000)	276,198.600** (55,423.670)	4.980** (0.000)
health	-62,789.49** (5,322.280)	-11.80** (0.000)	15,458.540** (4,445.883)	3.480** (0.001)
capacity	-925,251.60** (327,179.200)	-2.83** (0.005)	2,374,427.000** (224,397.800)	10.580** (0.000)
nandMW	-2140,549.00** (159,382.200)	-13.43** (0.000)	957,983.000** (277,214.300)	3.460** (0.001)
conf	-4.732** (47.460)	-0.10** (0.921)	171.877** (21.997)	7.810** (0.000)
cond	-3,636.72** (1,901.960)	-1.91** (0.056)	-16,180.650** (907.128)	-17.840** (0.000)
_cons	8,846,949** (23,616,500)	3.75** (0.000)	-3.28e+07** (3,581,034.000)	-9.170** (0.000)
Number of obs	672		672	
R-sq	0.762		0.263	
F test			373.140	

Note: () robust standard error and p-value in parentheses. ** $p < 0.05$

6. The analyses (2)

- A robustness check is conducted using the random effect (RE) method. See Table 2.
- The robustness check finds similar and consistent results in OLS and FE.
- The results reflect the validity of how significant the impact of COVID-19 is related to the tourism industry in the CAREC region

Table 2: Estimation results in RE panel regression method

Dependent variable: arr	RE	
GDP	1,357.551** (93.358)	14.540** (0.000)
popden	270,371.900** (10,873.7700)	24.860** (0.000)
health	-62,789.490** (5,322.275)	-11.800** (0.000)
capacity	-925,251.600** (327,179.200)	-2.830** (0.005)
nandMW	-2,140,549.000** (159,382.200)	-13.430** (0.000)
conf	-4.732** (47.456)	-0.100** (0.000)
cond	-3,636.718** (1,901.957)	-1.910** (0.0560)
_cons	8,846,949.000** (2,361,650.000)	3.750** (0.000)
Number of obs	672	
R-sq	0.762	

Note: () robust standard error and p -value in parentheses. ** $p < 0.05$

7. Conclusions and Recommendations

- In general, the findings shows the impact of COVID-19 could significantly devastate international tourism for CAREC member states.
- Adapting the trends in the use of technologies as a business response.
- Applications aimed at minimize human-to-human contact is another platform to benefit the tourism industry.
- CA governments must make a strong commitment and accelerate plan to adapt to the new digital future.
- Encourage travel bubble within the region.
- Encourage travel locally.

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Tourism Sector in Times of High Uncertainty

Discussant: Dr. Matthias Helble

Senior Economist, ADB



Summary of main results

“The purpose of this paper is to investigate the impact of the COVID-19 pandemic on the tourism industry in the CA region.”

Paper shows empirically that number of international arrivals in CAREC is positively associated with:

- Larger GDP
- Higher population density
- Lower capacity of health care system

Discusses some policy options:

- Invest in digital infrastructure
- Promote domestic tourism
- Encourage travel bubbles



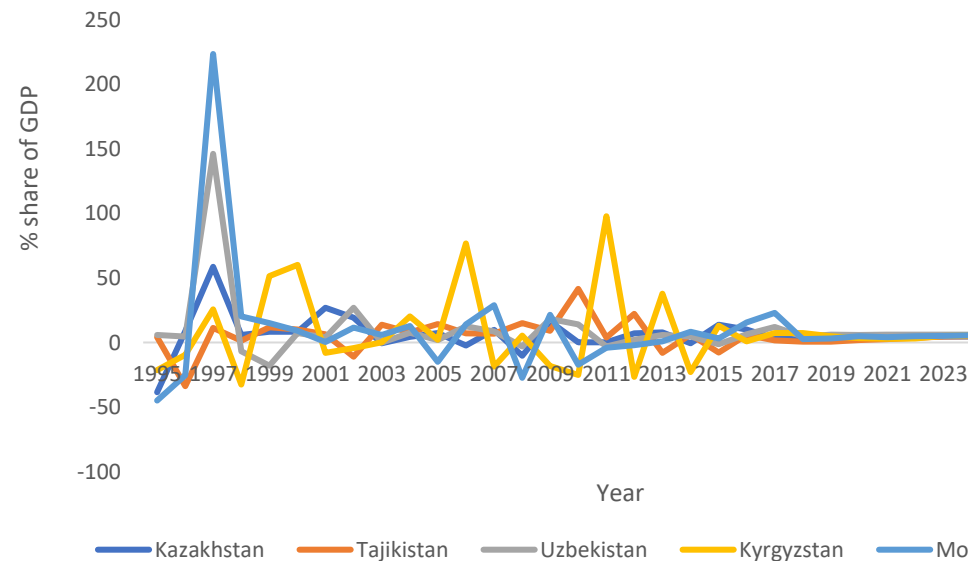
Minor comments:



- Index the arrival data to better compare
- Study bilateral tourist flows to better understand market
- Analyze airline market
- Show fall in tourist arrivals for 2020

- Source of data?
- Fluctuations hard to understand
- Minus contributions?
- Purpose of forecast? 2020!

Travel and Tourism's Direct Contribution to GDP in CA



Major comments: Econometric model

Econometric model:

$$\ln Arrivals_{it} = \alpha_0 + \beta_1 \ln COVID_case_{it} + \beta_2 Control_{it} + \mu_{it} \quad (2)$$

“The number of COVID-19 confirmed cases (*COVID_case*) and deaths are considered to be major pandemic-related variables. This variable *COVID_case* is the main explanatory variable.

The study examines the relationship between international tourism and COVID-19 cases and associated deaths, as well as health capacities in eight CA countries...”

- Where are the regression results with COVID-19 cases?
- How to address endogeneity?
- Why not controlling for the impact of the travel restrictions (University of Oxford Stringency Index)?
- Do you include quarterly FE? GDP per capita? Country FE?
- Why not include bilateral tourism arrivals?



Recovery in Stage 1: Domestic Tourism (Helble and Fink, 2020)

Domestic tourism: Redirecting outbound travelers to domestic destinations.

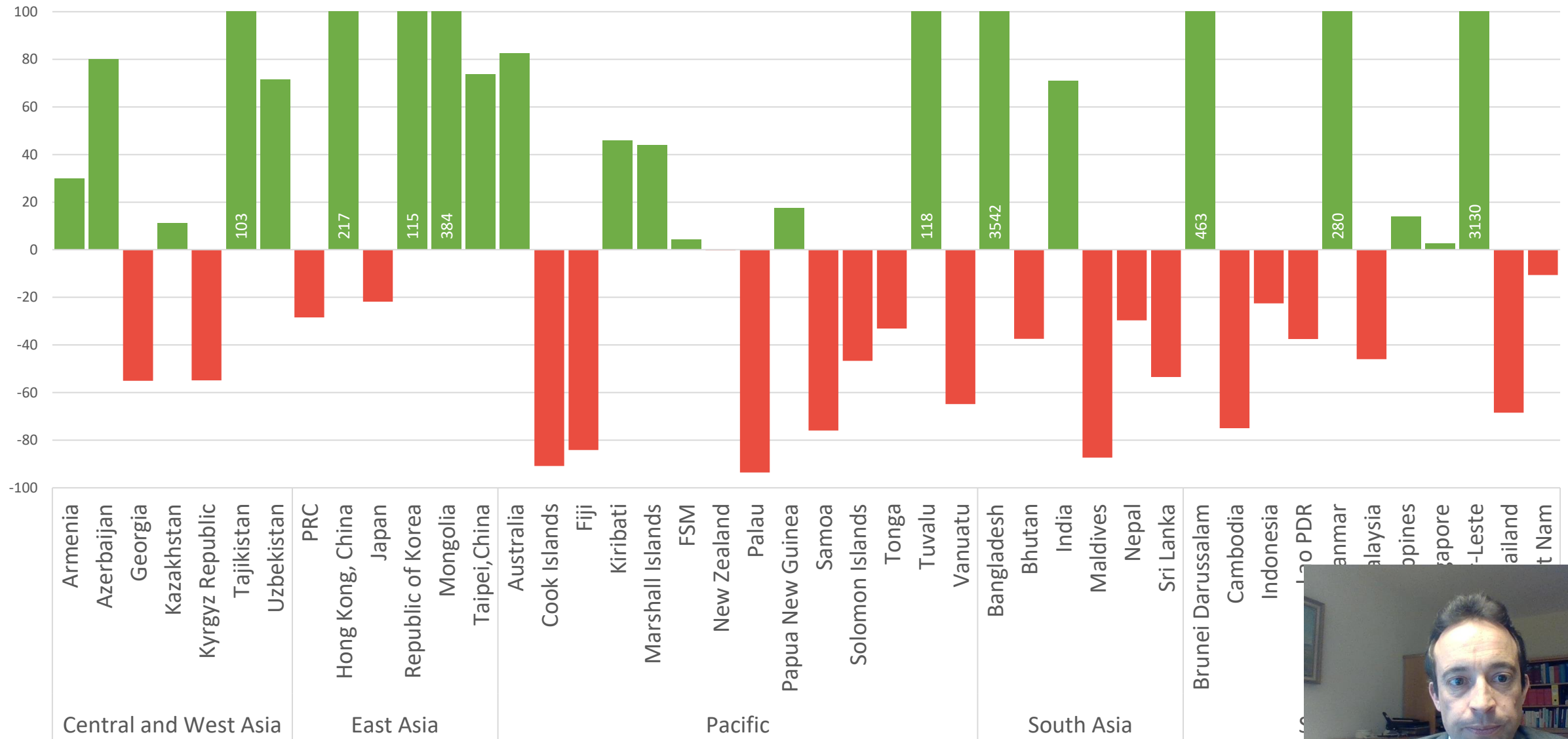
Could possibly fill the gap left by international tourists in about **half of the economies** in Asia and the Pacific. But in **highly dependent tourism economies**, domestic tourism will **not** be enough.

Challenges:

- Social distancing, and other NPI make it **difficult to operate at the pre-pandemic level.**
- **Local lockdowns** restrict domestic travel.
- **Less interest** in domestic destinations.
- **Mismatch** in terms of demand/supply.
- **Declined overall demand** due to economic downturn and fear of infection.
- No foreign exchange earnings.



Results for Scenario 1: Domestic Tourism Potential



Source: Helble and Fink (2020)



Recovery in Stage 2: Travel Bubbles (Helble and Fink, 2020)

Travel bubbles: Allowing travel (essential and/or leisure) between selected partners.

Bilateral travel bubbles with largest source economy could help reduce the gap. However, large gaps would remain in highly dependent tourism economies, such as Palau, Sri Lanka and Thailand.

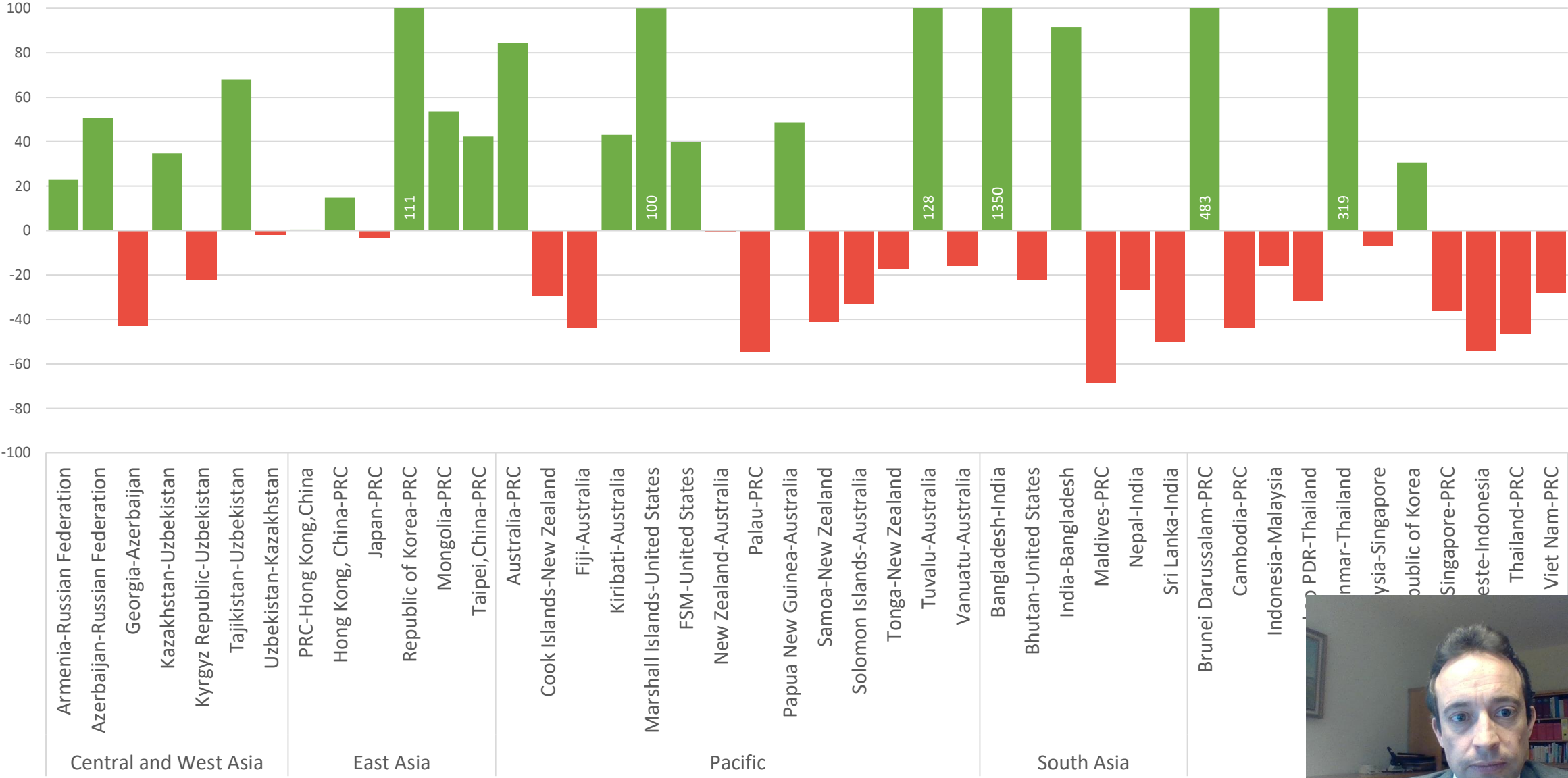
Sub-regional travel bubbles could be a viable option but are more challenging to negotiate and to maintain.

Challenges:

- Social distancing and other NPI make it difficult to operate at the pre-pandemic level.
- Tourists may **not be interested** in the destinations under agreement.
- **Overall lower demand** due to economic downturn and **fear of infection**.
- Establish a common health protocol.
- Ensuring adequate capacities of **medical facilities and services**.
- **Presence of uncertainties:** A sudden surge in COVID-19 cases could easily stall negotiations and halt existing agreements.



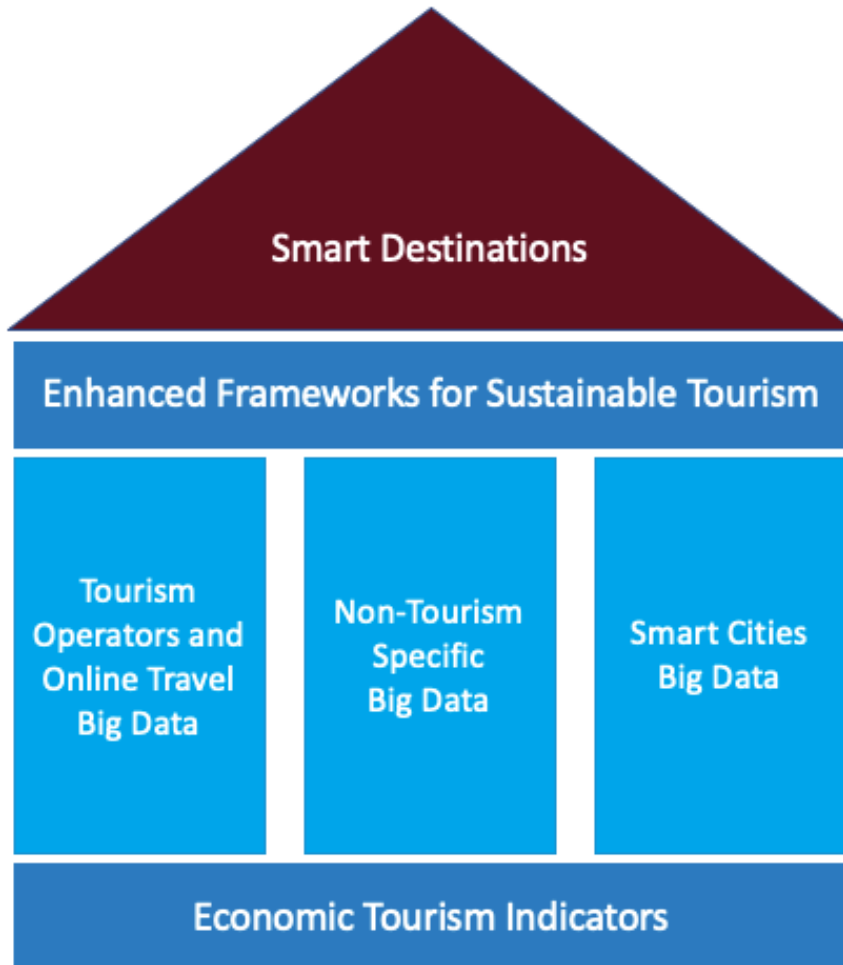
Results for Scenario 2: Preferential Partner Travel Bubbles



Source: Helble and Fink (2020)



Big Data for Recovery (ADB and UNWTO, 2021)



Source: ADB and UNWTO (forthcoming, 2021)

Case Studies:

- **Macao's** “Macao Ready Go” local and domestic campaign leverages multiple mainland big data providers and blockchain technology
- **Singapore's** “SingapoRediscover” campaign partners with VISA and Klook to research and promote local experiences
- **Thailand** partners with multiple platforms for domestic promotions
- **Republic of Korea** developing the Intelligence Platform



Thank you very much

mhelble@adb.org



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Tourism Sector in Times of High Uncertainty

Speaker:

Dr. Tahir Mumtaz Awan & Mr. Mrestyal Khan

Department of Management Sciences, Comsats University, Pakistan





Network Analysis of Tourism Stocks During Pandemic times: An Evidence from CAREC Region

Faheem Aslam, Yasir Tariq Mohmand, Tahir Mumtaz Awan, & Mrestyal Khan

Department of Management Sciences, COMSATS University Islamabad, Pakistan

Background

- The pandemic (COVID-19) tracked back from December 2019, devastated every walk of life globally.
- High level of uncertainty and reduced income, businesses shutting down was noticed in past one year.
- COVID-19 is also labelled as black swan event (Renjen, 2020).
- Estimated losses in major economies range around 2.4 to 3.0 percent of the gross domestic product (GDP) in pandemic times (Azevêdo, 2020).
- More severe effect was noted in the tourism sector globally.
- According to World Travel and Tourism Council Report in 2019, predicted yearly growth of 1.8% in the next ten years, but the COVID-19 changed the whole situation.
- CAREC region is being recognized as significant to the whole world (Buyers, 2003).

Contribution of the Study

- Threefold contributions to the existing COVID-19 financial literature
 - Applies comprehensive network theory to analyze the dynamics of the COVID-19 on 55 tourism stocks registered in the CAREC region.
 - An estimate of changes regarding the networks of five different categories (hotel & catering, travel agencies, transportation, airlines, and cruise lines) of these tourism stocks.
 - Analyses of network changes with the evolution of COVID-19, by dividing the timeline into three sub-periods.

Data

- Daily closing prices of 55 tourism stocks of CAREC region.
- 5 different categories namely, hotel & catering, travel agencies, transportation, airlines, and cruise lines.
- Data range: 01-July-2019 to 10-November-2020.
- Study period is divided further into three sub-periods;
 - S1 (pre-pandemic times)
 - S2 (peak times of pandemic)
 - S3 (time when the pandemic came to an end and the spread was controlled)

Network Construction

- Long-run correlation coefficient proposed by (Andrews, 1991).
- For a given sample observations T, Andrews (1991) estimate takes the following form:

$$\omega_T = \begin{bmatrix} w_{i,i} & w_{i,j} \\ w_{j,i} & w_{j,j} \end{bmatrix} = \sum_{m=-T+1}^{T-1} k\left(\frac{m}{B}\right) T(m)$$

where

$$T(m) = \begin{cases} T^{-1} \sum_{t=m+1}^{T-1} [Z_t Z_{t-m}], & m \geq 0 \\ T^{-1} \sum_{t=m+1}^T [Z_{t+m} Z_t], & m < 0 \end{cases}$$

- Where $t = 1, 2, \dots, T$, $Z_t = [r_{i,t}, r_{j,t}]^T$ [], and $k(\cdot)$ refers to the quadratic spectral kernel weighting function

Network Construction

- Furthermore, the mathematical expression for the quadratic spectral kernel function is as follows:

$$k \left(x = \frac{m}{B} \right) = \frac{25}{12\pi^2 x^2} \left(\frac{\sin \left(\frac{6\pi x}{5} \right)}{\frac{6\pi x}{5}} - \cos \left(\frac{6\pi x}{5} \right) \right)$$

Additionally, the formula for long-run correlation $\rho_{i,j}$ is given below:

$$\rho_{i,j} = \frac{w_{i,j}}{\sqrt{w_{i,i}w_{j,i}}}$$

- Distance is calculated by using Mantegna (1999) and Stanley and Mantegna (2000) methodology as illustrated below:

$$D_{ij} = \sqrt{2 (1 - \rho_{ij})}$$

- Matrices with 55×55 dimensions (considering all tourism stocks)

Minimum Spanning Tree

- Since stocks in the equity market are completely connected, they cannot be represented by complex networks, hence interconnections among the stocks can better be represented using a minimum spanning tree (MST).
- A minimum spanning tree is a sub-graph extracted from the network with all nodes but reduced edges.
- For MST extraction, this study used the Kruskal algorithm, which identifies most prominent and central nodes.
- Different centrality measures (degree, betweenness, and closeness centralities) were used.

Network Topology

- The mathematical illustration for betweenness centrality is given in equation below:

$$B_c(i) = \sum_{a,b \in N} \frac{\lambda(a, b|i)}{\lambda(a, b)}$$

- Where N represents the node-set, $\lambda(a, b)$ shows the shortest paths whereas $\lambda(a, b|i)$ refers to the number of shortest paths passing i .
- Furthermore, equation 8 gives the mathematical expression for “closeness centrality”.

$$C(V_i) = \frac{(N - 1)}{\sum_{j=1}^n d(N_i N_j)}$$

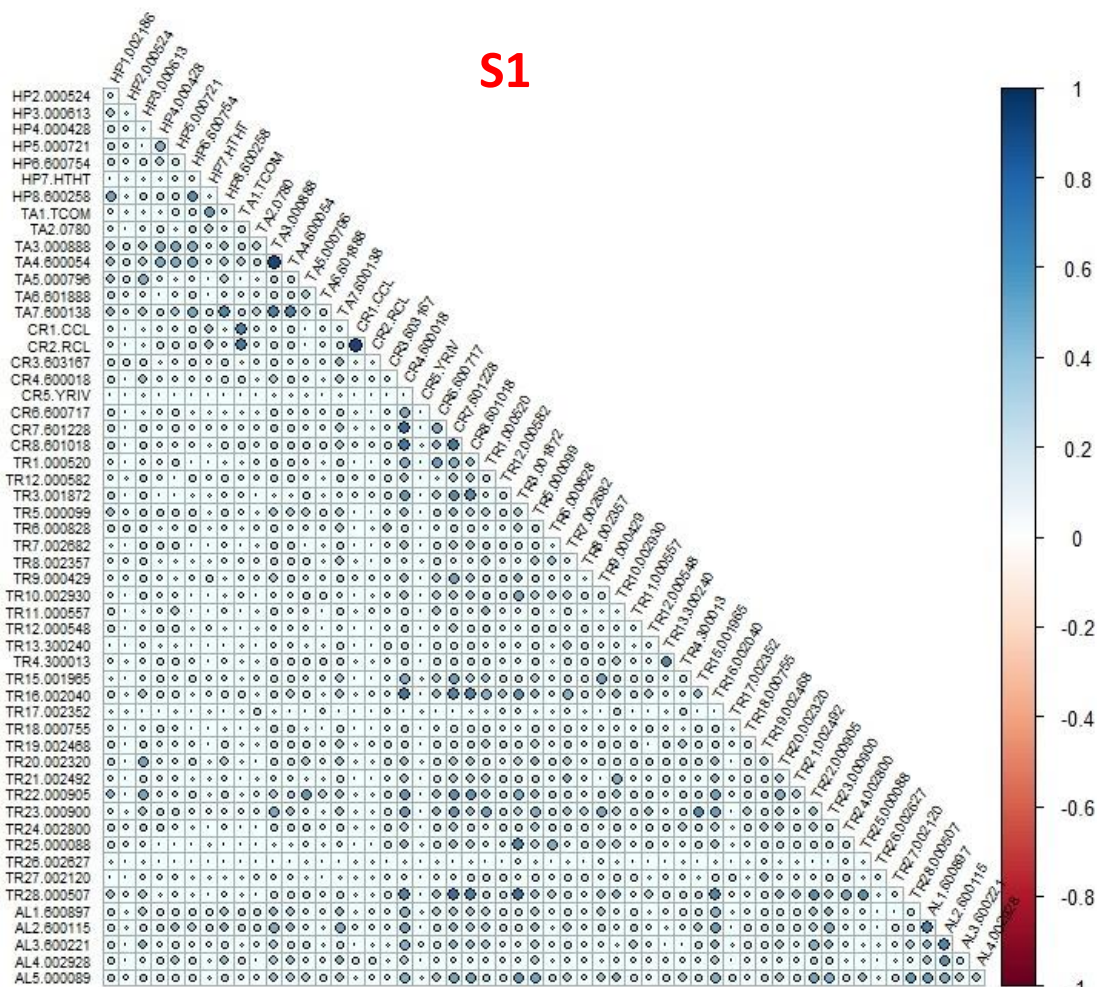
- Where $d(N_i N_j)$ shows the minimum distance from N_i to N_j whereas $(N - 1)$ is used for normalization.
- Moreover, the averaged path is also considered which is illustrated below:

$$a = \sum_{s,t \in V} \frac{d(s, t)}{n(n - 1)}$$

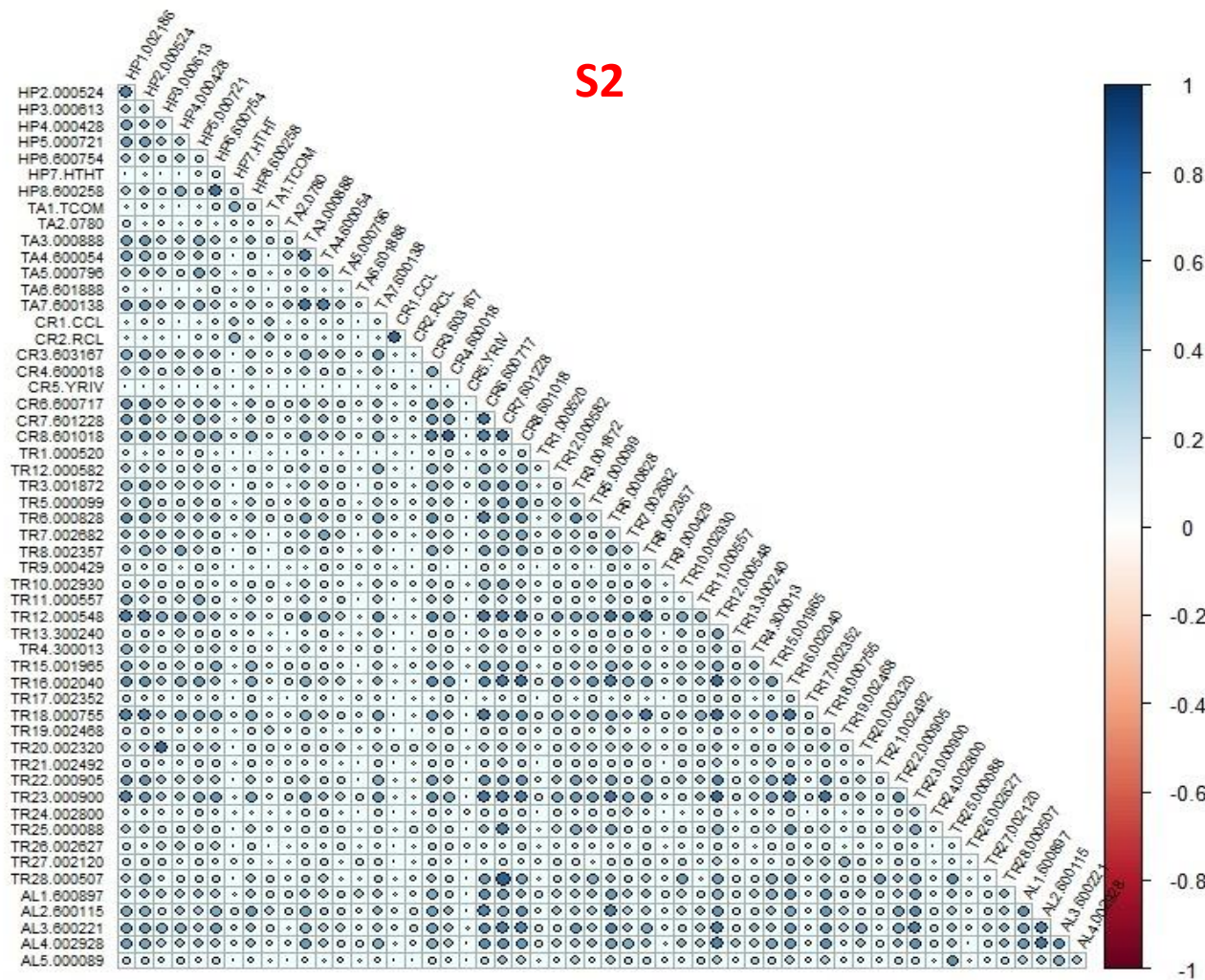
- Where n refers to the number of nodes, V represents the set of nodes, the shortest path from s to t is denoted by $d(s, t)$.

Increased Correlation Coefficients (with COVID Spread)

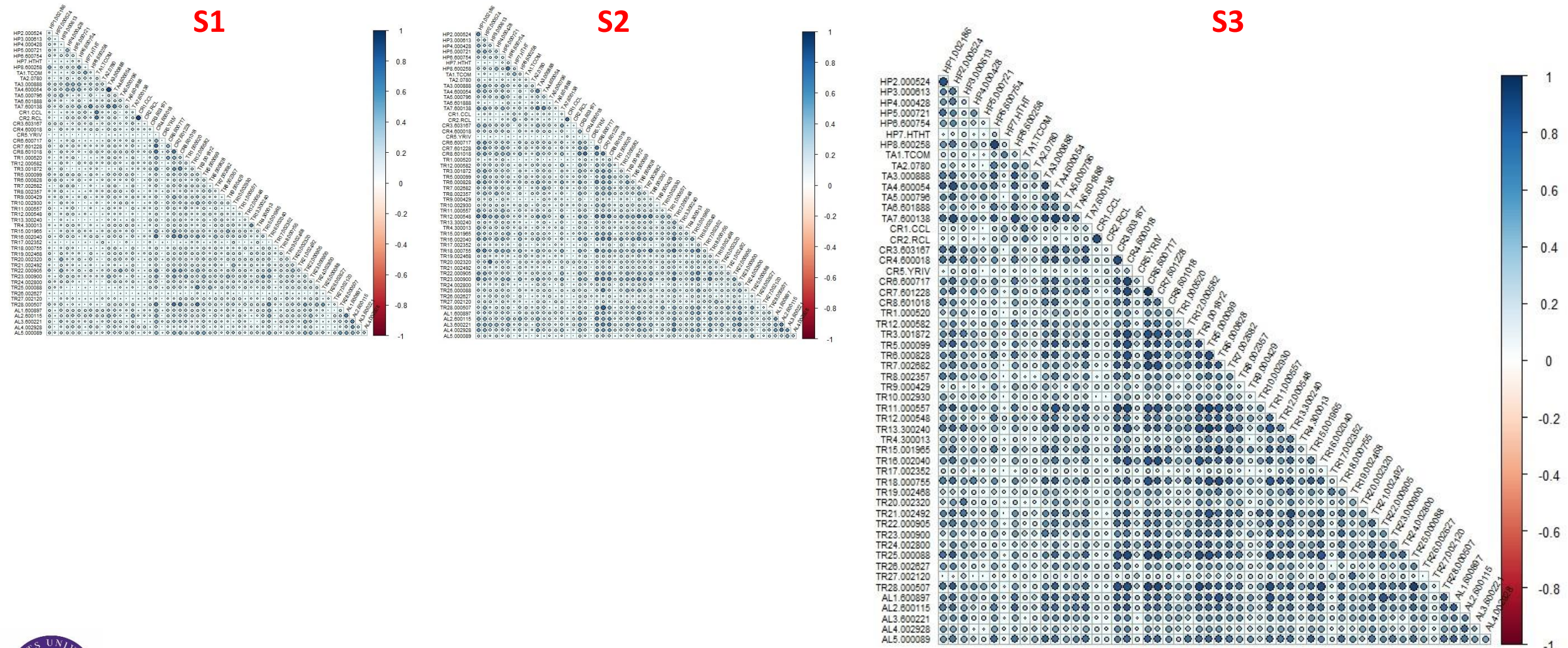
S1



S2

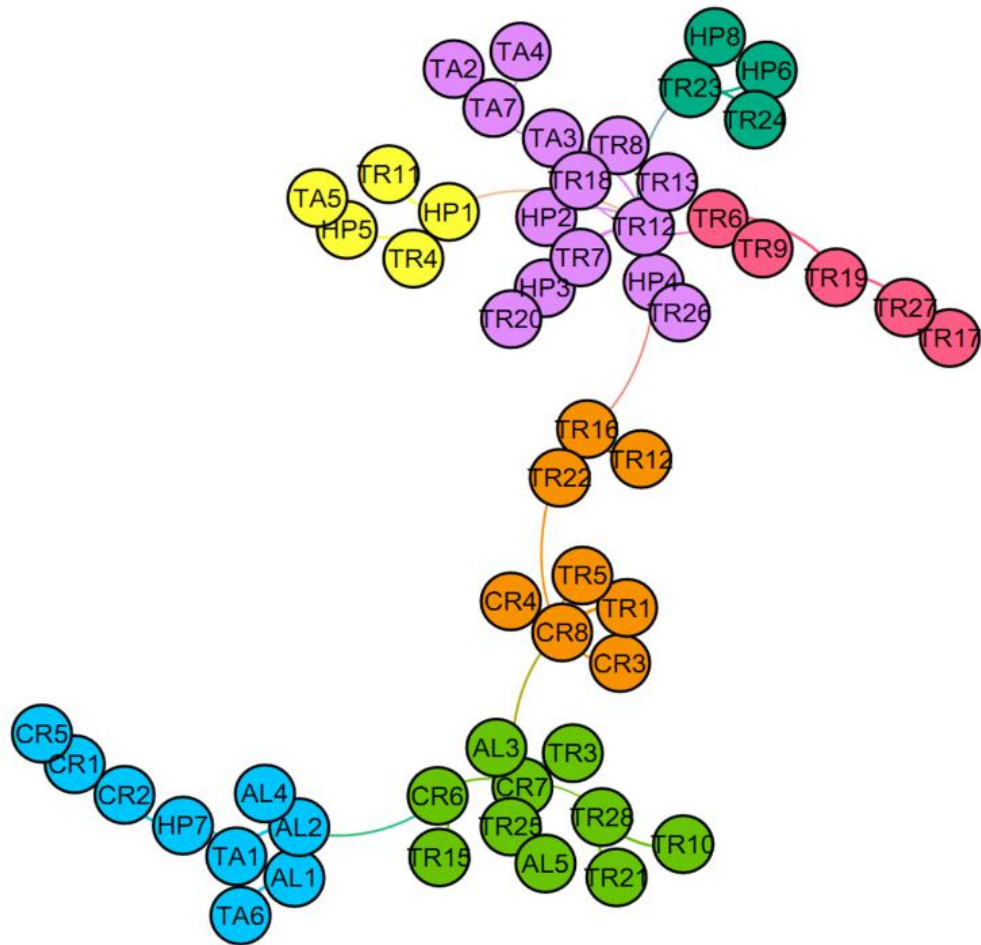


Increased Correlation Coefficients (with COVID Spread)

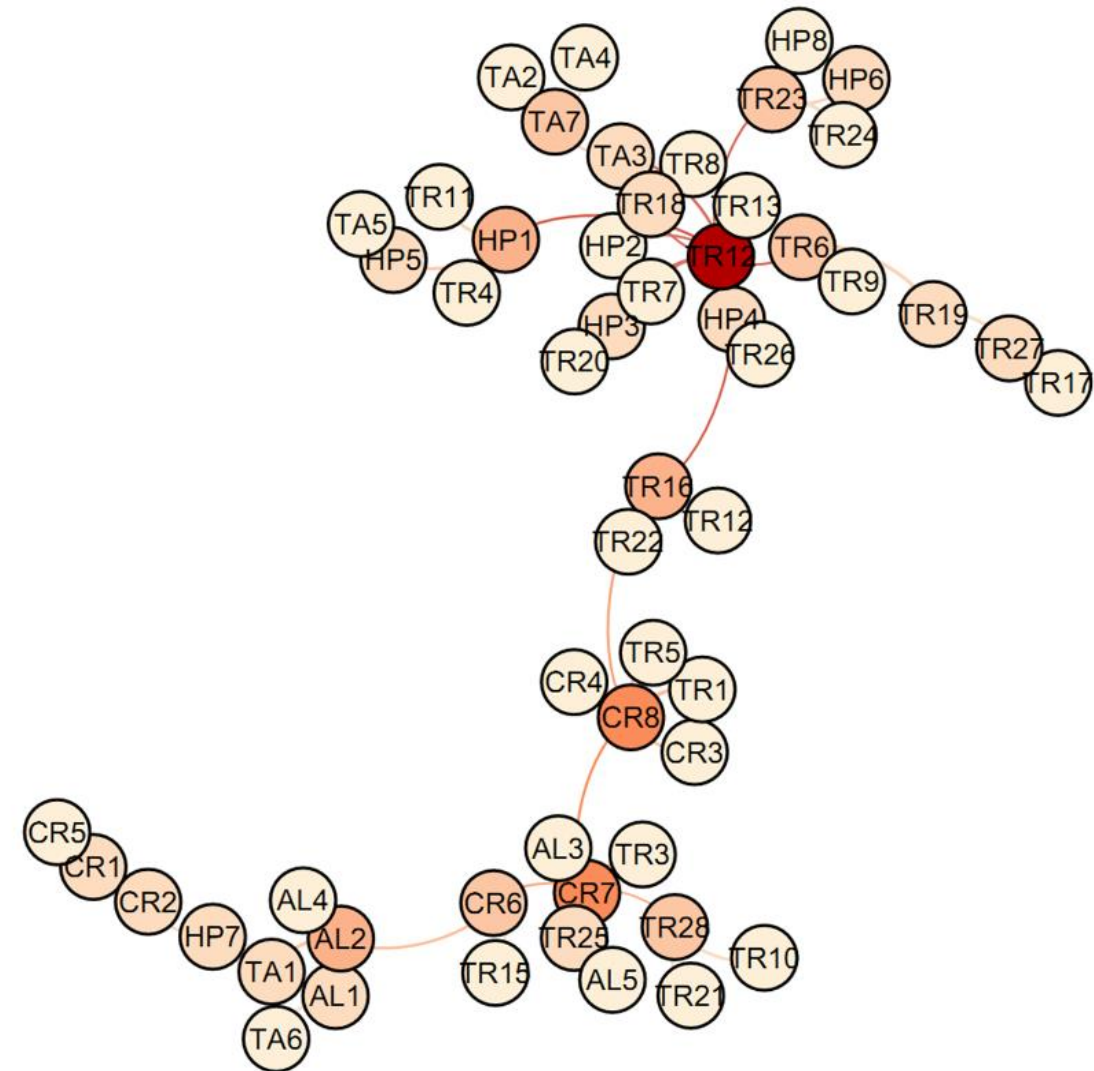


Financial Networks (S1)

Community Structure (S1)

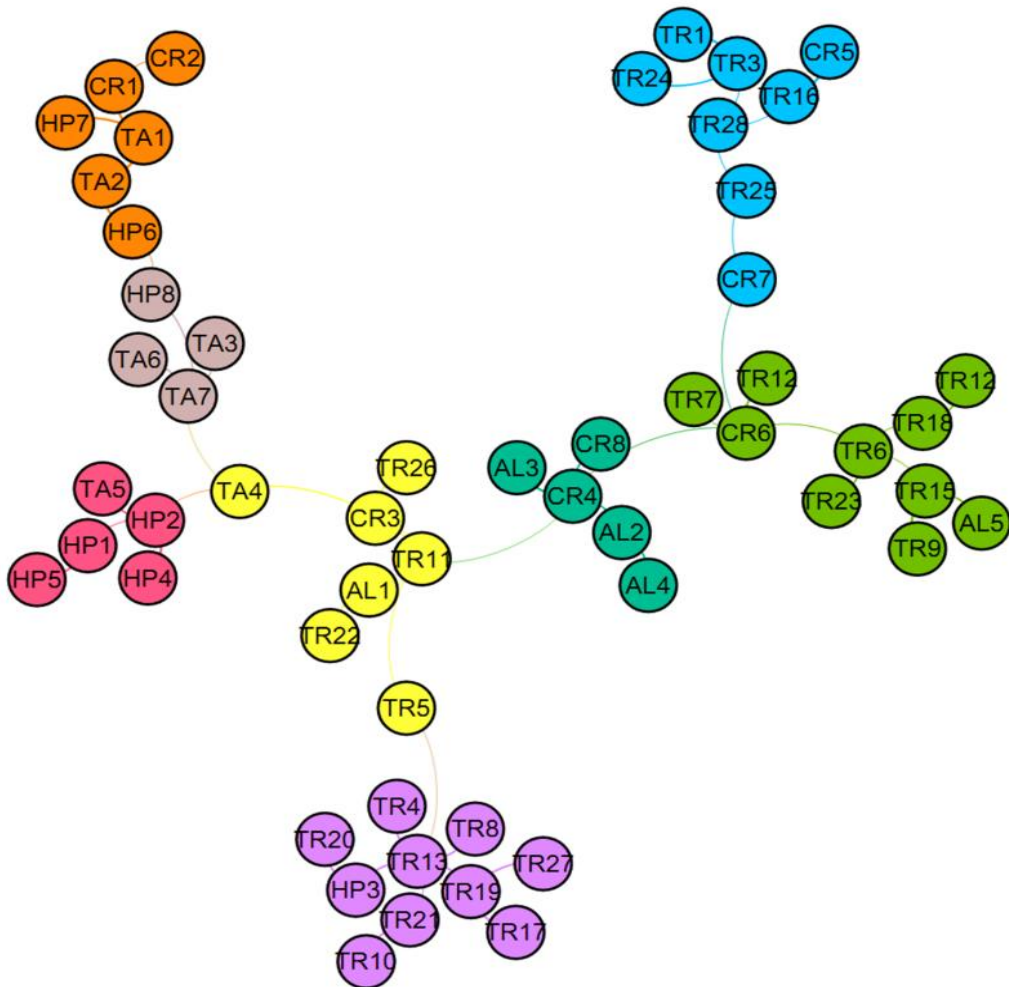


Degree Classification (S1)

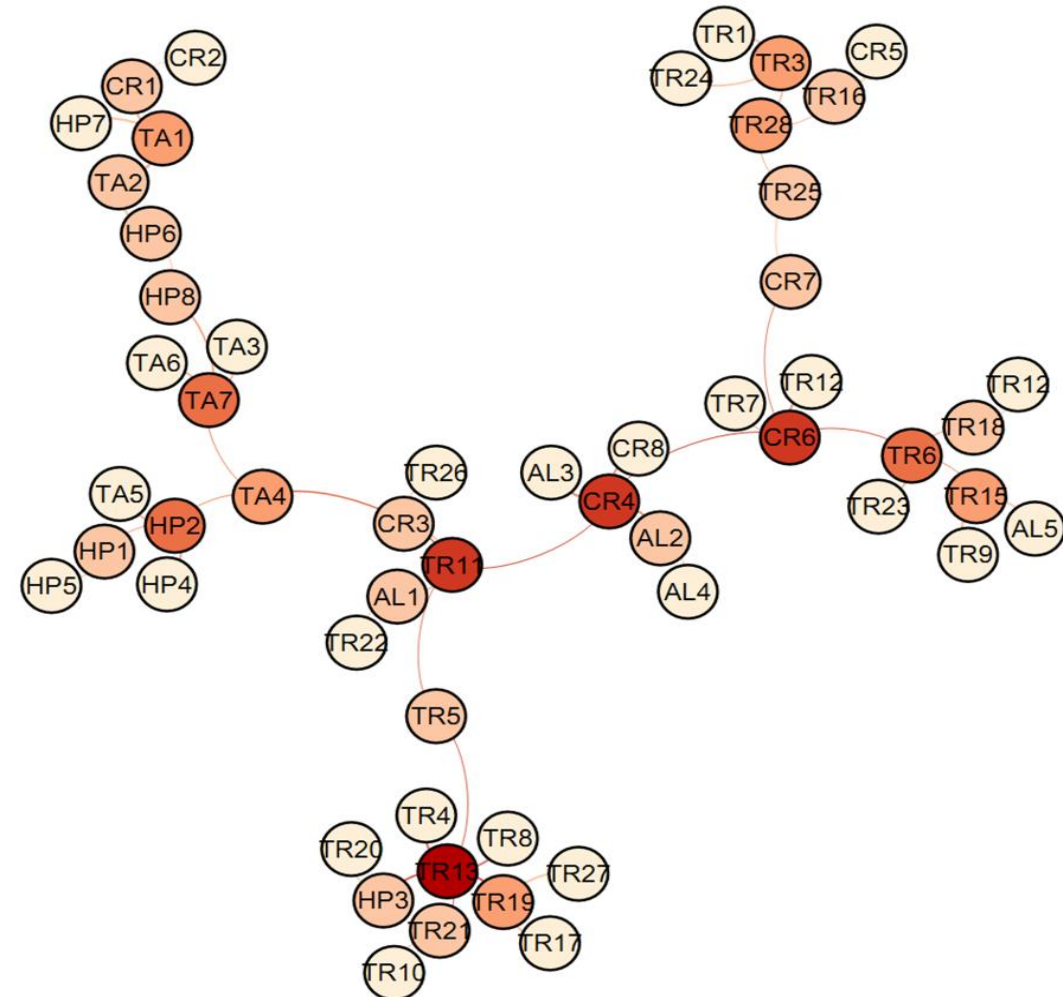


Financial Networks (S2)

Community Structure (S2)

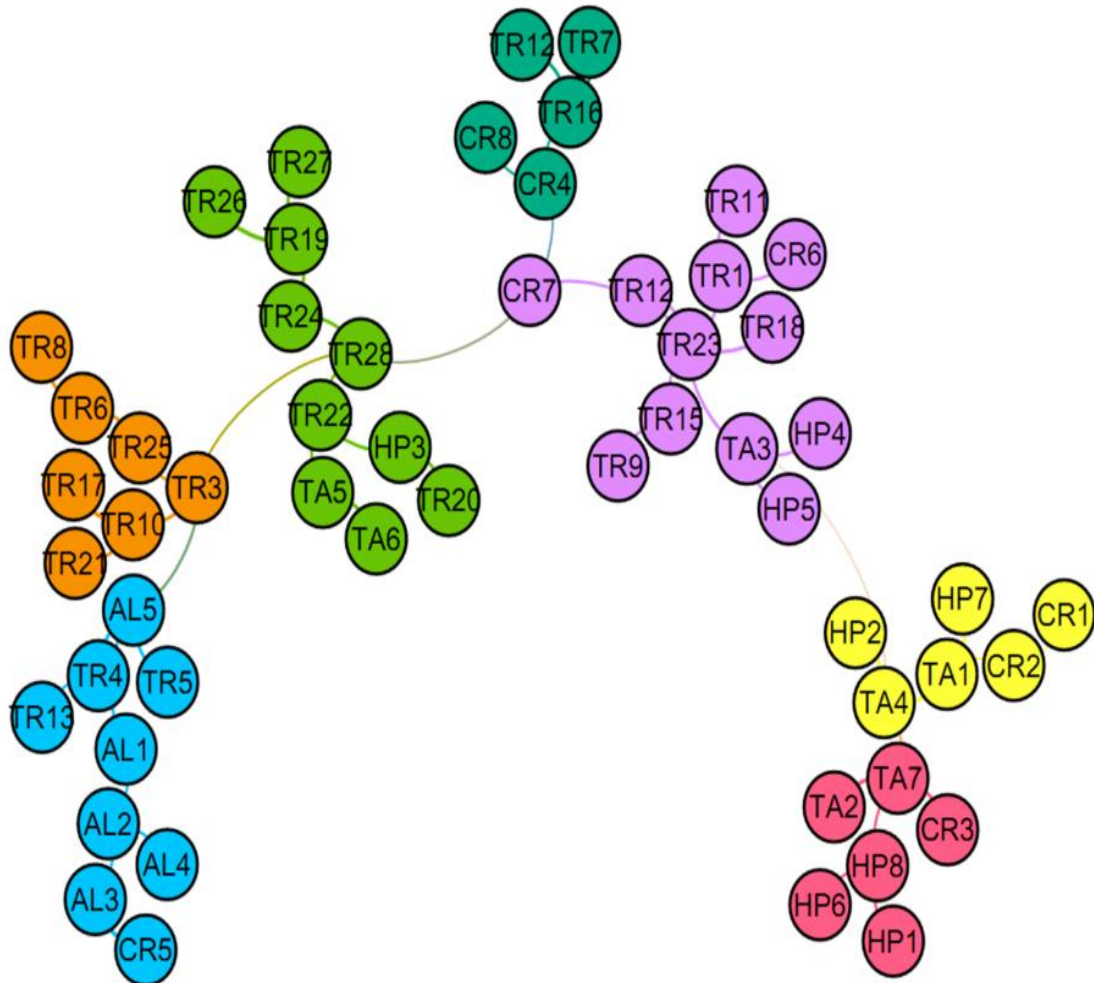


Degree Classification (S2)

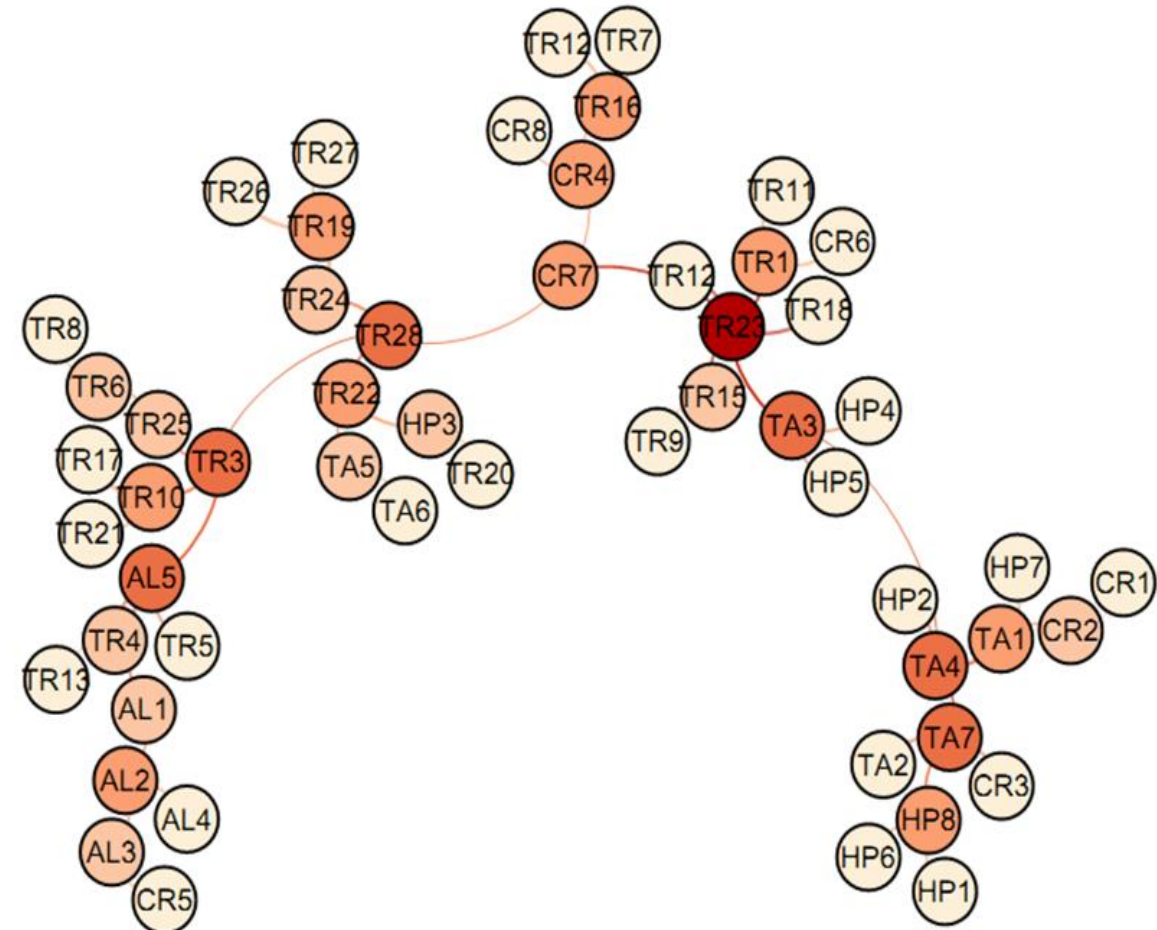


Financial Networks (S3)

Community Structure (S3)



Degree Classification (S3)



Topological Properties of the MST's

MST	Vertices	Links	Path length	Betweenness	Closeness
S1	55	54	5.146	0.078	0.203
S2	55	54	6.038	0.095	0.173
S3	55	54	5.717	0.089	0.181

Concluding remarks

- Estimated changes in financial networks 55 Tourism stocks by dividing the dataset into three sub periods (pre-pandemic, peak times, and post-pandemic).
- An increased association during the peak of virus spread and decreased afterwards.
- Important implications for both the domestic and foreign investors to construct optimal portfolios and to adopt risk mitigating strategies.
- The stock market regulators in the tourism industry must incorporate coordinated and combined policies to safe the whole industry.
- Investment managers can utilize the information regarding the tourism stocks in establishing pair trading strategies via observing the co-movement of selected categories.

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Discussant: Mr. Sanjay Saxena

Managing Director, Total Synergy Consulting, India



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Q&A



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**SHORT BREAK
(10 minutes)**

Next session starts at 12. 20 (GMT+8)

