

## Introduction

In the aftermath of COVID-19, many organizations have been profoundly impacted. In many cases, a **sudden switch to remote work** has been forced on employees, while at the same time they must deal with other effects of this outbreak on their day-to-day lives.

At this same time, **Enterprise Social Media** (e.g. Zoom, Slack, Teams) have seen spikes in their adoption to address an increased need for remote collaboration.

We examine the implications of COVID-19 for **how** and **with whom employees connect** as part of their work lives.

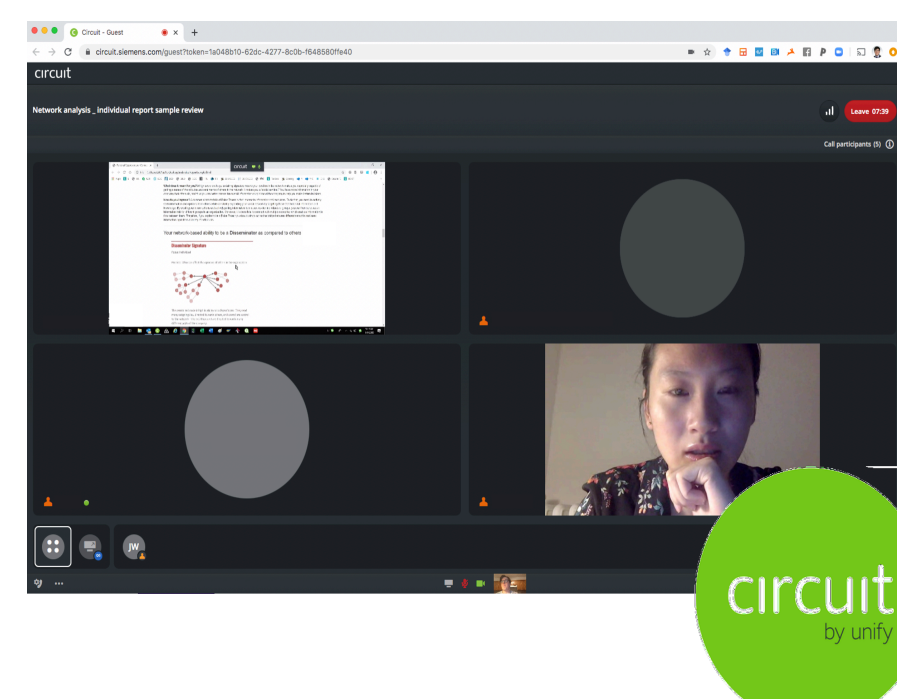
## Theoretic Framework

Employees' behavior may be shaped by several factors...

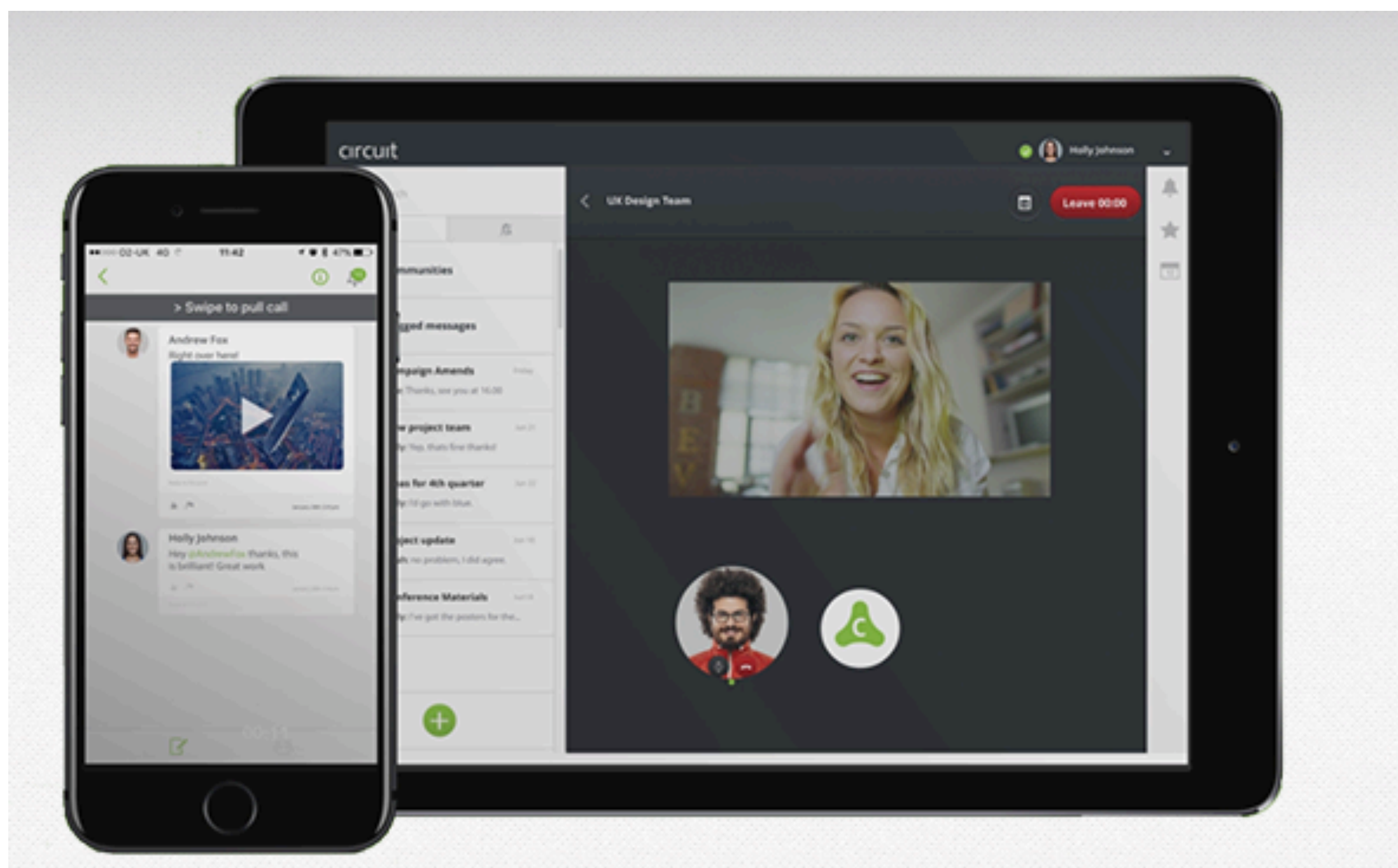
- Personal responses to crisis and threats
  - Influences of isolation and need to alter connections
  - Effects of remote work (virtuality) on collaboration
  - Affordances of organization communication technology
- By examining work on each of these factors separately, we can theorize about **the joint effect they may have on organization communication** during COVID-19.

## Data Collection

Digital trace data, on the use of the **Circuit video conferencing platform** was gathered from the Chinese HR branch of a large international company.

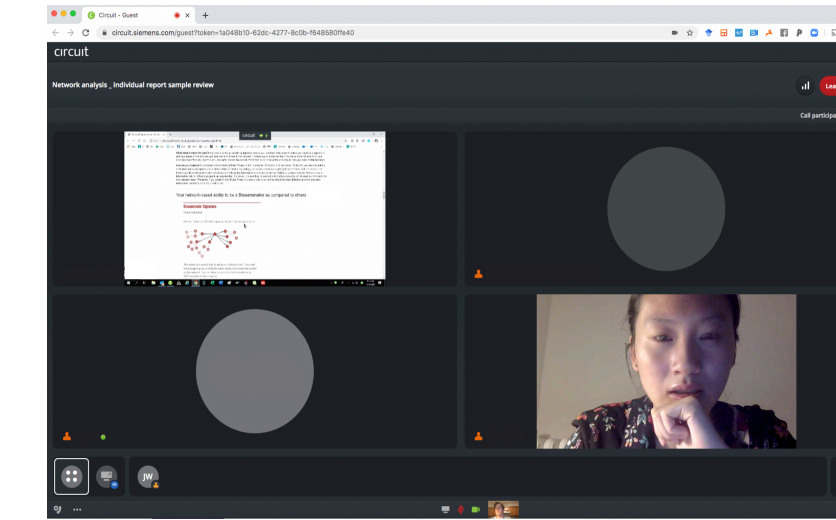


circuit

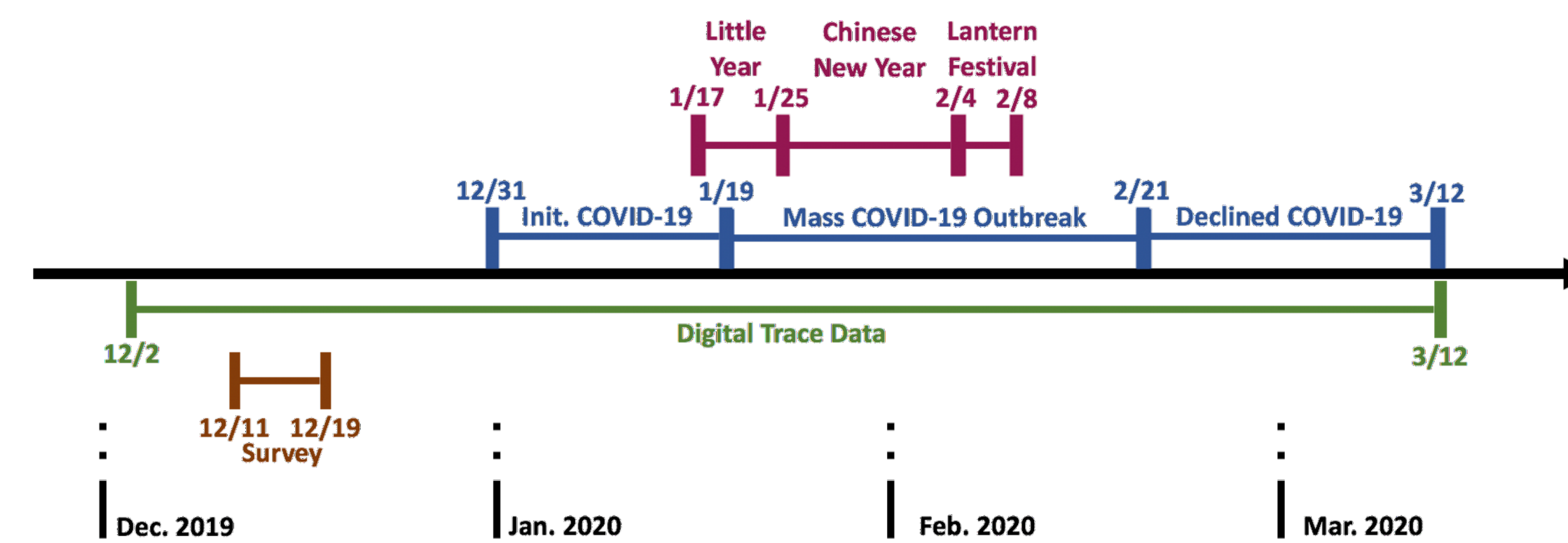


## Data Collection

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Prior to the Covid-19 outbreak, a survey was conducted with employees of the company about their social relations with one another.



Digital trace data was gathered both pre- and during the Covid-19 pandemic in China. Peak growth in Covid-19 corresponded with travel around the Chinese New Year, a potential confounding factor in our analysis.

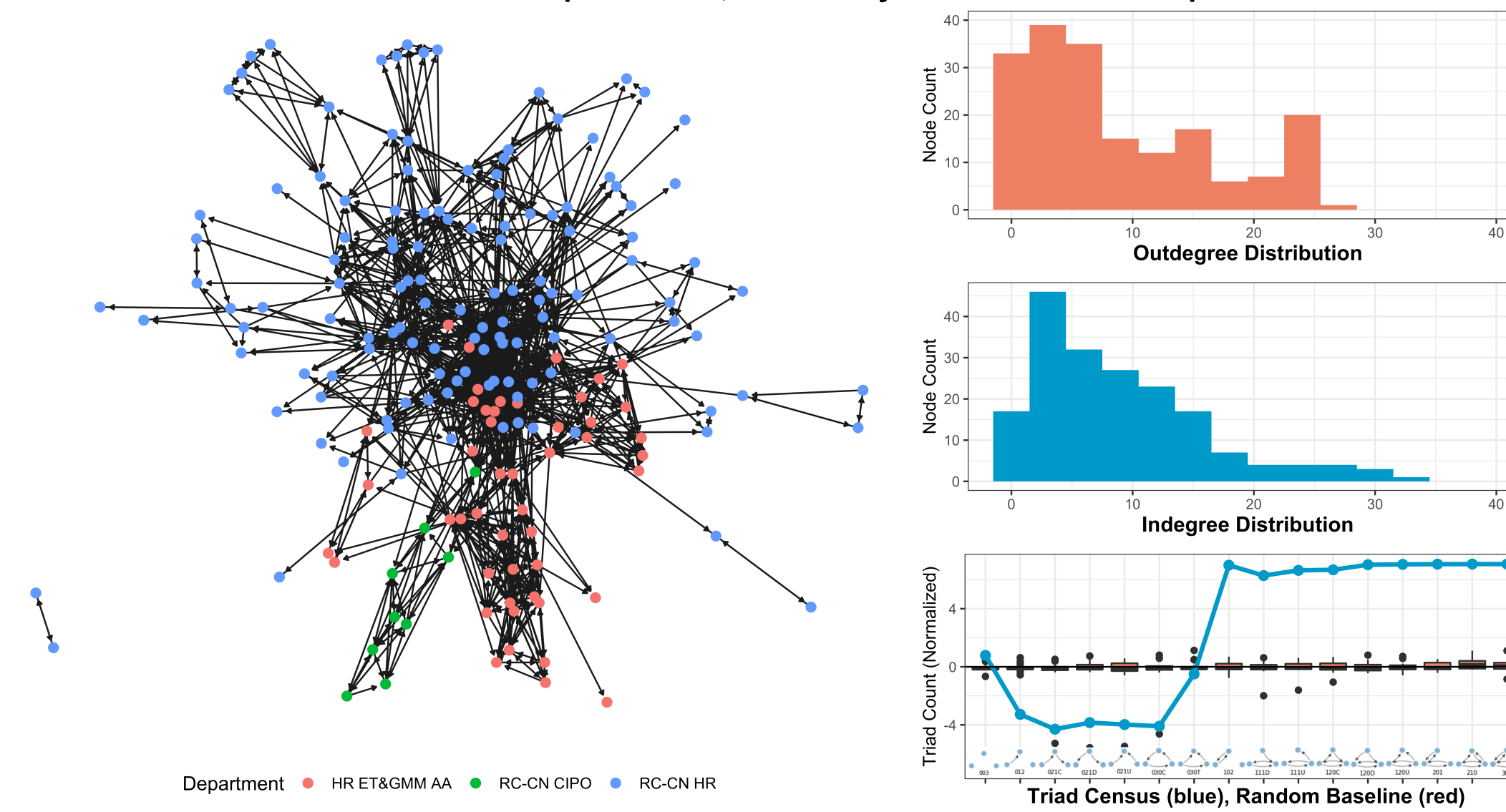
To compare across time points, digital trace data on who meets with whom was split into two-week cross sections:

- 1/10 – 1/23 Initial spread of Covid-19
- 1/24 – 2/6 Widespread Covid-19, Chinese New Year
- 2/7 – 2/20 Widespread Covid-19
- 2/21 – 3/5 Moderate/Declining Covid-19

## Affects of Ties on Interaction

Using **social relations from survey data** collected in December, we examine how dyads with these relations **interacted differently on Circuit** during Covid-19.

Interact in Person: In the past month, who have you interacted with in-person?



185 Nodes; Average degree of 8.9; 57.3% Reciprocity; 0.08 Btw.Centralization; 0 Isolates

Circuit Interaction Patterns (1/10-3/5) for Dyads with/without pre-Covid Ties

	With-Tie Mean	No-Tie Mean	Diff. in Mean	p Value
Meeting Count	1.390	0.065	1.325	0.000
Total Duration (hours)	1.657	0.940	0.717	0.000
Avg. Duration (hours)	0.306	0.340	-0.035	0.002
Avg. Meeting Size	2.484	2.680	-0.196	0.000
Burstiness Score*	0.008	-0.043	0.051	0.000

A non-paired t-Test comparing patterns between pairs of individuals who did and did not report interacting in-person pre-Covid revealed significant differences in behavior on Circuit.

Comparing only dyads who held at least one meeting over circuit

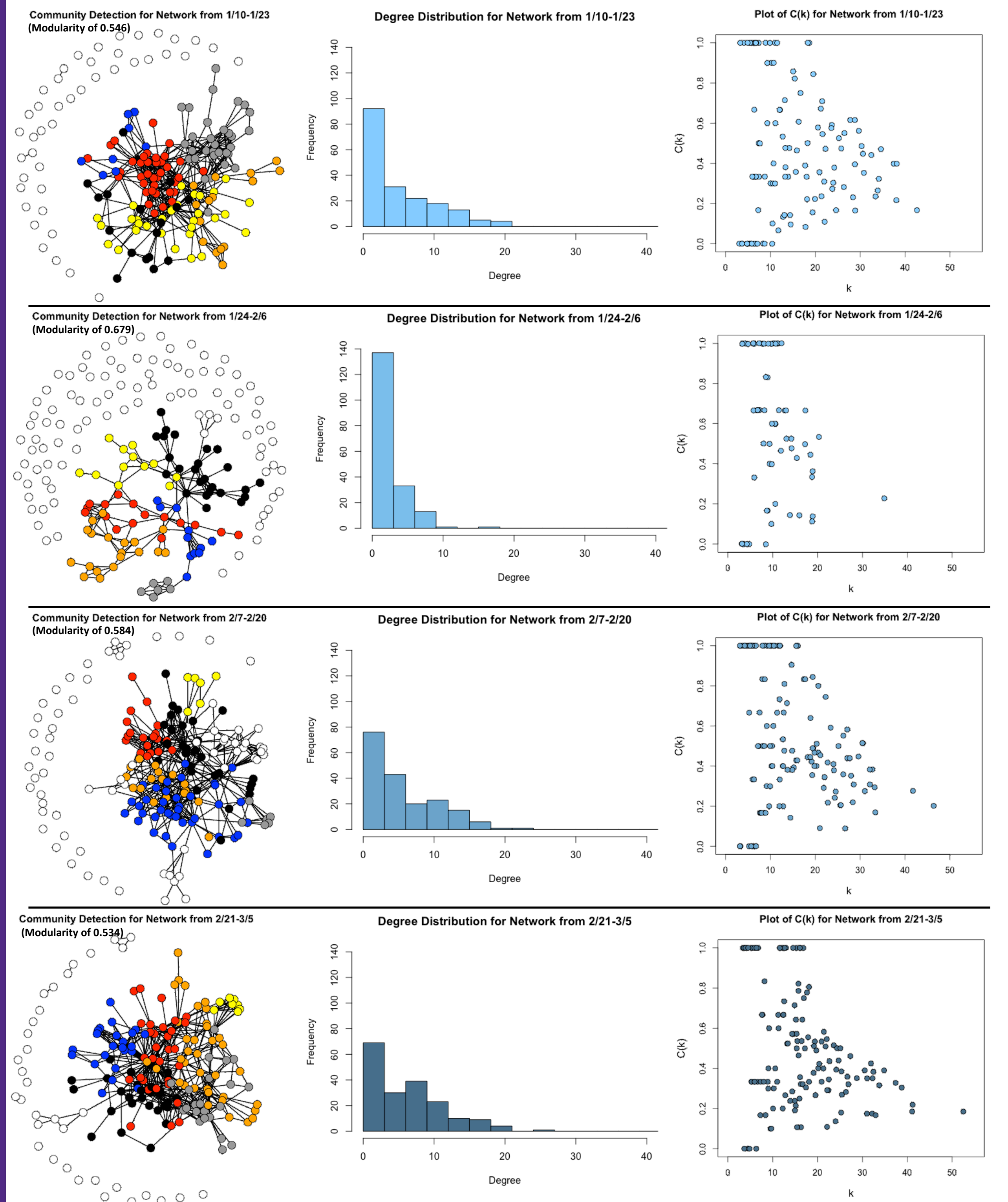
\* Goh, K. L., & Barabási, A. L. (2008). Burstiness and memory in complex systems. *EPL (Europhysics Letters)*, 81(4), 48002.

## Trends in Meeting Network

**Nodes N: 185 employees** (across all points in time)  
**Links L(t):** Indicate who met using Circuit in time t

Time Period	L Links	< > Avg. Path Length	C Clustering Coefficient	C Random Network	Community Modularity
1/10 – 1/23	491	3.245	0.408	0.028	0.546
1/24 – 2/6	191	4.285	0.482	0.011	0.679
2/7 – 2/20	533	3.309	0.425	0.031	0.584
2/21 – 3/5	591	3.235	0.389	0.035	0.534

Benchmark clustering coefficients from Erdos-Reyni networks with the same number of nodes / links



## Conclusions

Overall, the number of people interacting over Circuit decreased during the period of initial spread of Covid-19 in the Chinese holiday, but in the end increased.

While initially tended to **shrink** their network of contacts while Covid-19 was spreading, over time they began to **expand** their network of digital connections.

## Acknowledgements



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