

Thank you for participating in BAC@MC 2021. This document contains important background information including the competition's rules, guidelines, and data description.

Your team (consisting of between two and four undergraduate students) will review, possibly restructure, explore and analyze the competition data. Each team will summarize the analysis process and conclusions drawn from the data.

If you have any questions, please contact us (see contact information below). We look forward to receiving your posters and videos and seeing you in April. Good Luck!

THE STORY

Rhen Tal gave a quick glance at her phone as it lightly vibrated on the desk. Welcoming the brief distraction, Rhen picked up the phone and examined the screen. She had just received a text from her NYC Department of Data Analytics colleague, Khan Doh.



Rhen grinned and typed in a quick reply.

Yes, it's true. Offered the job a few days ago. Have time for a Zoom meeting? I can tell you more about my first project.

Khan quickly answered:

Sure. Send me the link.

Within a minute or two, Rhen and Khan's lunchtime Zoom meeting commenced.

Khan: "Congrats on the new position! You will certainly be missed around here."

Rhen: "Thanks. I appreciate it. It was a difficult decision to start a new job, but I believe their work has the potential to be very impactful. For example, my first project is going to be a joint effort with the Federal Department of Housing and Urban Development – better known as HUD"

Khan: "Sounds great. Do tell."

Rhen: "You may remember that NY Governor Andrew Cuomo was once HUD Secretary"

Khan: "Yes, during the Clinton Administration. At the time, Cuomo was a big advocate for home ownership."

Rhen: "Exactly. That idea is also central to this new project. Throughout the COVID crisis, Cuomo has repeatedly pointed out how the pandemic has disproportionately affected high-density, low-income neighborhoods. These neighborhoods have a very low percentage of private home ownership and have

been hit hard by COVID-related unemployment. Therefore, a big infusion of government subsidies is going to be needed in the form of rent relief and/or subsidies."

Khan: "I assume that is where HUD comes into the picture?".

Rhen: "Yup. Cuomo believes that home ownership can, in some instances, be a cheaper and better option as it provides a level of long-term financial well-being that can improve the stability of a neighborhood. Since the source of these funds would come from HUD, Cuomo has been speaking with Biden. Hence, the joint project to investigate if these assumptions are justified by an analysis of NYC data."

Khan: "Makes sense. Get the facts out before the wallet. If the solution makes sense for NYC it will likely be applicable to other large cities across the US. What kind of analysis are you looking for?"

Rhen: "First we will want to verify our assumptions about the varying impact of COVID on different communities. We will start by looking at sub-borough level data to see how the virus impact varies with socio-economic and housing data."

Khan: "Although real estate prices in NYC have fallen significantly due to the pandemic, I suspect that finding large numbers of one or two-family homes in NYC is still going to be difficult."

Rhen: "Good point. However, we are not necessarily thinking only about single-family homes. Cuomo is advocating for HUD capital and incentives to build additional condominiums as well as to convert existing apartments or even unused office space into condominiums. He believes that, in the long term, diverting funds from rent support programs into home ownership programs will have a greater positive impact and hence is a better use for HUD funds. New construction and renovation will likely allow the incorporation of amenities that might reduce the impact of future pandemics, such as more entry points, better barriers between units, improved ventilation and so on. People need to feel safe in NYC."

Khan: "Improving existing housing and enabling people to purchase homes is going to require massive funding."

Rhen: "That is the other piece of the analysis. We need to understand what has been happening over the last ten years. Is homeownership increasing or decreasing? What is happening to home prices and rental costs? Are incomes keeping pace with increased housing costs? What are the barriers to home ownership? Is it the down payment? Is it simply qualifying for a loan? If a family could afford the down-payment, how would the mortgage payment compare to the rent in the same neighborhood? Perhaps rent vouchers could become mortgage vouchers - at least for initial years of the loan."

Khan: "Makes sense. Of course, COVID has had a significant impact on all the questions you are looking at so trends you spotted in the last ten years may have been completely upended during the last ten months."

Rhen: "Exactly. In many neighborhoods COVID's devastation will be felt long after the virus has been contained. Large scale job loss, in particular, has a cascading effect on many things, including housing."

Khan: "So many questions – all of which need to be analyzed at the sub-borough level. You and your team have plenty of work to do."

Rhen (sporting a wide smile): "That is why we are paid the big bucks."

Khan (laughing): "Yes, big bucks. Well now I know where I'm sending my resume."

What will all the data tell them?

THE DATA

The analysis should be based primarily on the given information

- o BAC@MC 2021-data-definitions.xlsx contains description of data.
- NYC-housing-data.xlsx contains NYC housing data.
- o NYC-COVID-data.xlsx contains NYC COVID-19 data.
- o **NYC-demographic-other-data.xlsx** contains NYC demographic data and other supporting data.

THE POSTER & VIDEO

- The poster and video should present the team's ideas, methodology, and any insights or conclusions based on the data analysis.
- Judging will be based on your analysis of the above datasets. Any additional data sources used to supplement your analysis should be cited on the poster.
- Posters and videos must be submitted by 11:59 pm on April 22, 2021. Detailed instructions for
 poster submission will be made available a few weeks prior to the submission deadline. These
 instructions will be e-mailed to all participating teams and posted on the competition website.
- The team posters and videos will be evaluated on the following criteria:
 - O Clarity and relevance of research
 - Appropriateness of analysis
 - O Significance of findings
 - Appropriate use of data
 - Style and content of the poster
 - Knowledge and professionalism of presenters
 - Overall creativity and originality

CONTACT

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