

# Reframing Residency Points

ideas

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Reducing the test score gap to create a more diverse pool of NYC firefighter candidates

**New York City's Behavioral Design Team (NYC BDT) partnered with the New York Fire Department (FDNY) to design and test messaging aimed at encouraging FDNY firefighter candidates who are NYC residents to claim residency points that can boost their scores on the competitive exam. An email and text campaign using behavioral levers to reframe the residency credit helped close the gap in claim rates between underrepresented candidates and historically represented candidates and improved the diversity of the 2019 NYC firefighter cohort.**

## Summary

Every four years, the New York City Fire Department (FDNY) begins a highly competitive recruitment process for new firefighter candidates. In the 2017-2018 recruiting season, FDNY set explicit targets for increased diversity and engaged ideas42's NYC Behavioral Design Team (NYC BDT) to design and test ways to increase the number of women and candidates from underrepresented groups who become firefighters.

Candidates must take a written exam, and, on this exam, there are opportunities to claim additional points that can boost a candidate's overall score, which may put them over the threshold of eligibility for firefighter candidacy, making it more likely they'll be called for further processing. For example, there is a residency checkbox at the end of the exam that awards candidates five additional points for being a long-term resident of New York City. While many firefighter candidates who take the exam are long-term residents of New York City, many fail to select the residency checkbox. They can also submit a claim by email after the exam and add these points to their score. However, many candidates still fail to claim these points.

While the FDNY recruiting team already invests resources in a reminder campaign encouraging all candidates to claim their points, the NYC BDT decided to test the relative effectiveness of **social norms** and **loss aversion** framing through a randomly assigned email and text campaign. Further, by sending additional email and text reminders to underrepresented candidates, observational data allow us to compare the additive effects of an increased number of messages over time.

By reframing the act of claiming the residency credit, our behavioral reminders helped close the gap in exam scores between underrepresented and historically represented candidates.

## Highlights

- ▶ Making it easier to claim extra points for being a long-term NYC resident on a competitive FDNY exam could help underrepresented candidates persist on the path to becoming firefighters.
- ▶ Social norms and loss aversion message framing encouraged more candidates to claim these residency points.

## Why not claim residency points? .....

There may be many reasons that a candidate who is a long-term resident of NYC doesn't submit the claim and secure five additional points on their 100-point exam, on which most appointed firefighters must score in the high 90s to advance in the process. We hypothesized that there are several behavioral bottlenecks contributing to candidates' failure to claim beneficial residency points:

- ▶ **Hassle factors:** Candidates are burdened by the steps it takes to submit a claim (e.g., write an extra email), if they missed the checkbox at the end of the exam
- ▶ **Prospective memory:** Candidates intend to claim points once they receive their scores, but they forget to do so at the appropriate time
- ▶ **Identity threat/mental models:** Underrepresented candidates may be concerned that claiming residency will reduce their chances of being chosen; this has to do with historic presumptions (*mental models*) that any additional information works against them
- ▶ **Social norms:** There is no visible norm around additional exam points, so candidates do not know whether it is normal or typical to claim residency points
- ▶ **Scarcity:** Candidates may be too cognitively depleted to focus on the task of submitting a claim (e.g., providing required documentation of their high school enrollment) for what seems like a small number of points
- ▶ **Overconfidence:** Five points does not seem important in a score out of 100, and candidates may assume that they will make the eligible list without the points

## Redesigning the messages to change behavior .....

To address these bottlenecks, the NYC BDT's campaign employed a series of text message and email reminders, randomly assigned to people who took the written exam and reported a home zip code in New York City. 909 candidates received messages with social norm framing, and 912 candidates received messages with loss aversion framing. In addition, identified candidates from underrepresented groups received three emails and three texts, while all other candidates received one email and one text. Text messages linked to web pages with the same content that was included in the email campaign.

Email and text message reminders employed the following behavioral levers to encourage candidates to claim their residency points:

**Treatment 1 framing used social norms:** People are more likely to act in the ways that they perceive others act, especially people with whom they identify.<sup>1</sup> Because a majority of successful firefighter candidates claim their residency points, email and text message content referenced this norm to encourage candidates to claim their points.

**Treatment 2 framing used loss aversion:** Losses loom larger than gains in our minds.<sup>1</sup> Messages instilled the sense that test takers would lose points they had already earned by being a resident to inspire them to act immediately.

**All groups used salience:** People tend to focus on the most urgent tasks at hand, often to the detriment of other less urgent, yet important tasks.<sup>2</sup> For candidates who intend to claim residency points, the release of exam scores provides the opportunity to impose a “deadline” on claiming these points. Evidence suggests that even an artificial deadline may increase the salience and urgency of claiming residency points, potentially elevating it to a priority for firefighter candidates and encouraging them to take immediate action.<sup>3</sup>

**All groups used hassle reduction:** The existence of multiple steps in a process often gets in the way of completing it.<sup>4</sup> Especially for members of underrepresented groups, research finds that bureaucratic hassles have been shown to reinforce perceived threat, encourage negative self-talk, reduce motivation, and significantly discourage people from achieving positive outcomes.<sup>5</sup> We reduced the hassles of submitting a claim by sending test-takers a pre-populated email (“mailto”) link with all of the necessary contact information and draft email language, to reduce the ambiguity and steps associated with the task of claiming residency points.

## Results

Overall, social norm framing and loss aversion framing performed equally in encouraging candidates to claim residency points. On average, about 35% of all candidates claimed their points, with and without controls for test score and median income, which is an increase from the average claim rate of about 6% the previous exam year.

Underrepresented candidates—who received three emails and text messages instead of one—on average were 7.5 percentage points more likely to claim residency points than historically represented candidates, regardless of the social norms or loss aversion framing.<sup>6</sup>

These results suggest that a more intensive campaign utilizing behavioral levers, in addition to FDNY’s targeted outreach efforts, helped close the gap in claim rates between underrepresented candidates and historically represented candidates.

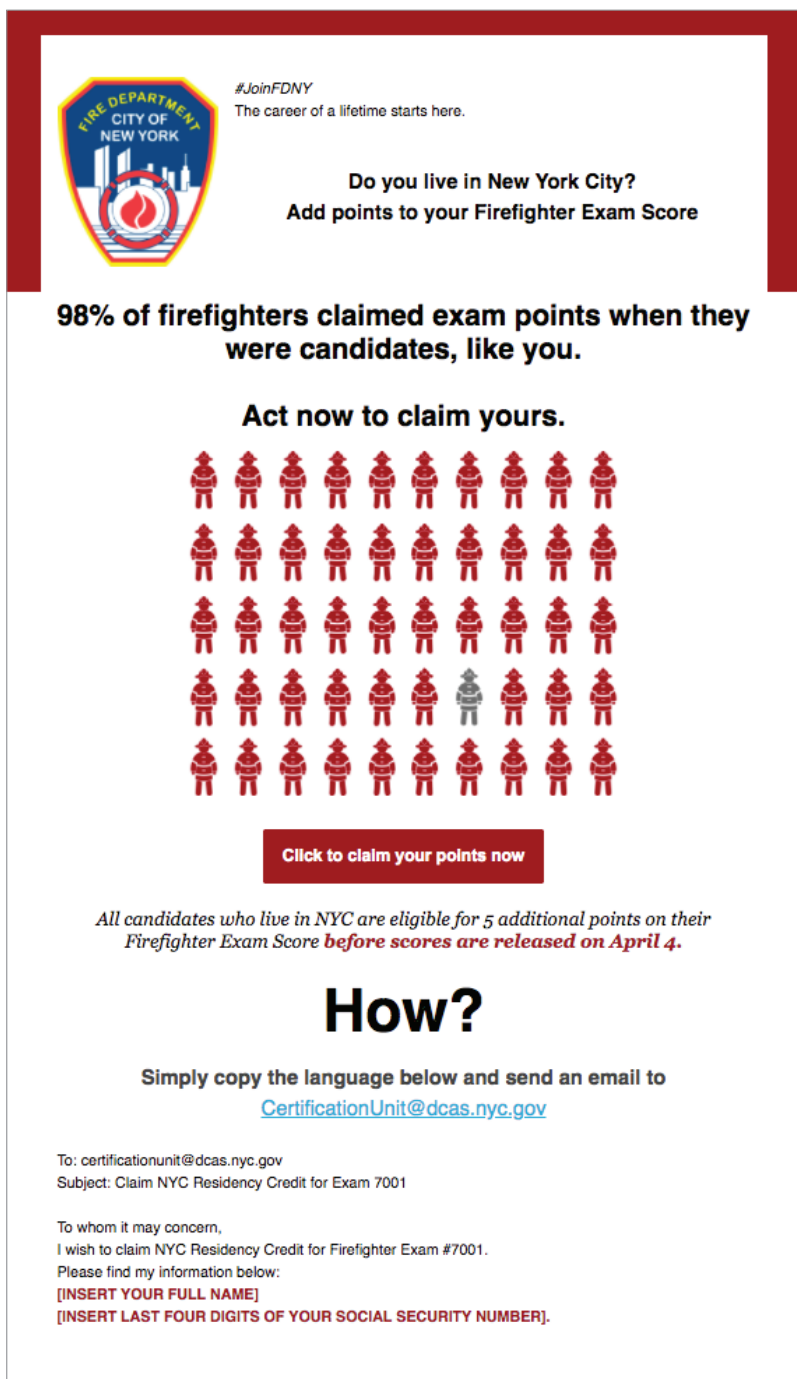
<sup>1</sup> For Exam 7001, candidates need to prove that they:

- Graduated from a New York City (NYC) high school (or received a GED from New York State and had last been enrolled in an NYC high school) and their transcript shows they resided in NYC while attending that high school; or
- Filed tax returns in 2014 and/or 2015 as an NYC resident for a minimum of 12 months during those years; or
- Received cash assistance benefits for a minimum of 12 months in 2014 and/or 2015 while residing at an NYC address.

These requirements can change with each exam, and claims are subject to verification during processing.

This project demonstrates the effectiveness of a targeted behavioral campaign for reducing a gap between underrepresented groups and other candidates by levelling the playing field a bit, as well as the potential for increased return on sending multiple messages over a short period of time. Making it easier to claim five points for being a long-term city resident could increase the diversity of the qualified candidate pool for the FDNY. These promising results also make the case for implementing behavioral interventions in the form of repeated messaging in similar contexts (other application procedures or screening tests) where people aren't completing a step that could help them continue through a process successfully.

### Design A: Social norms



**FIRE DEPARTMENT CITY OF NEW YORK**

#JoinFDNY  
The career of a lifetime starts here.

**Do you live in New York City?  
Add points to your Firefighter Exam Score**

**98% of firefighters claimed exam points when they were candidates, like you.**

**Act now to claim yours.**

Grid of 50 firefighter icons (49 red, 1 grey).

**Click to claim your points now**

*All candidates who live in NYC are eligible for 5 additional points on their Firefighter Exam Score **before scores are released on April 4.***

## How?

Simply copy the language below and send an email to [CertificationUnit@dcas.nyc.gov](mailto:CertificationUnit@dcas.nyc.gov)

To: certificationunit@dcas.nyc.gov  
Subject: Claim NYC Residency Credit for Exam 7001

To whom it may concern,  
I wish to claim NYC Residency Credit for Firefighter Exam #7001.  
Please find my information below:  
[INSERT YOUR FULL NAME]  
[INSERT LAST FOUR DIGITS OF YOUR SOCIAL SECURITY NUMBER].

**Design B:** Loss aversion



#JoinFDNY

The career of a lifetime starts here.

**Do you live in New York City?  
Add points to your Firefighter Exam Score**

**Don't miss out on the points  
you've earned.**

**NYC residents earn extra points on the  
Firefighter Exam, but you must act now.**



**Click to claim your points now**

*All candidates who live in NYC are eligible for 5 additional points on their  
Firefighter Exam Score **before scores are released on April 4.***

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Subject: Claim NYC Residency Credit for Exam 7001

To whom it may concern,  
I wish to claim NYC Residency Credit for Firefighter Exam #7001.  
Please find my information below:  
**[INSERT YOUR FULL NAME]**  
**[INSERT LAST FOUR DIGITS OF YOUR SOCIAL SECURITY NUMBER].**

## Endnotes

<sup>1</sup> Kahneman, Daniel, et al. "Anomalies: The Endowment Effect, Loss Aversion, and Status Quo Bias." *The Journal of Economic Perspectives*, vol. 5, no. 1, 1991, pp. 193–206.

<sup>2</sup> Shah, A. K., et al. "Some Consequences of Having Too Little." *Science*, vol. 338, no. 6107, Nov. 2012, pp. 682–85. *CrossRef*, doi:10.1126/science.1222426.

<sup>3</sup> Ariely, Dan, and Klaus Wertenbroch. "Procrastination, Deadlines, and Performance: Self-Control by Precommitment." *Psychological Science*, vol. 13, no. 3, 2002, pp. 219–224.

<sup>4</sup> Bettinger, E. et al., (2012). "The Role of Application Assistance and Information in College Decisions: Results from the H&R Block FAFSA Experiment." *Quarterly Journal of Economics*, 127 (3)(1) 1205–1242.

<sup>5</sup> Murphy, M. C., Steele, C. M., & Gross, J. J. (2007). "Signaling threat how situational cues affect women in math, science, and engineering settings." *Psychological Science*, 18, 879-885.

Reeves, S. L. (2015). *Caught up in red tape: bureaucratic hassles undermine sense of belonging in college among first generation students* (Doctoral dissertation).

<sup>6</sup> This result is statistically significant at the 1% level ( $p < 0.01$ ).