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Impacts of Policy Changes on Worker Safety Outcomes in New York City Construction Sites

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Table of Contents

Abstract.....	2
Key Findings	2
Introduction	3
Objectives	4
Methods.....	4
Results.....	5
Estimating Policy Impacts with Quantitative Data	11
Study Limitations and Strengths	13
Relevance and Practical Application.....	13
Presentations, Publications and Dissemination Plan.....	14
Acknowledgements.....	14
References	15
Appendix: Focus Group Guide	18

Abstract

This study evaluated the implementation and explored the impacts of a construction safety policy enacted by the City of New York to abate incidence of injuries and fatalities, particularly among non-union workers, many of whom are immigrants. This research focused on outcomes of Local Law 196 in two main areas: construction workplace safety and access to safety training for the target population. Using a mixed methods approach that combined exploratory quantitative and qualitative strategies, the study identified significant remaining barriers to program success in outreach to the target population, in training capacity and delivery methods, and in monitoring and enforcement systems. It also found declining trends in injury rates that might be partially attributable to the policy change, but which might not be sustainable without addressing the identified limitations of the new program.

Key Findings

Analysis of data from focus groups that were conducted for this study indicates that increased access to safety training for vulnerable and immigrant workers contributes to increased safety awareness and ability to prevent accidents and to a sense of empowerment for individual workers in the target population. However, this analysis also underscored the limitations of safety training in the absence of other injury prevention mechanisms such as effective monitoring and enforcement of worksite safety regulations and promotion of a safety culture among construction managers.

Significant barriers kept the target population from fully accessing the program, including limited outreach to workers and employers about the new requirements and training delivery methods that do not address specific characteristics of vulnerable and immigrant workers, including language, literacy, and fear of employer retaliation.

The implementation of Local Law 196's safety program rests primarily on the assumption that increased training and enforcement capacities would lead to better worksite safety outcomes. However, the structure and the processes put in place might not be aiding success, and they might be creating unanticipated consequences, such as employer practices that prioritize holding training certification cards over compliance with site safety regulations and worker protections. Increasing collaboration between the New York City Department of Buildings (the agency administering the program) and agencies with experience with labor standards would enhance the enforcement system of the program.

Day laborer organizations have played a critical role in increasing access to training for vulnerable and immigrant workers. Because of their vast experience advocating and serving the target population, these organizations' increased input in the program's design and implementation would significantly enhance outcomes. Expanding their participation in the initial planning of the program could have prevented the mismatch between the highly ambitious program timelines and the existing training capacity. This mismatch led to two postponements in the program milestones.

Using pre-intervention injury-rate trends, this study estimated what injury rates would have been without the intervention and compared those predicted values with observed injury rates. Starting in September of 2018, actual injury rates were consistently lower than their predicted values, suggesting the presence of effects from implementation of the construction safety program of Local Law 196. However, this downward trend can be only partially attributable to new policy, as day laborer organizations had increased their training capacity since 2016, and local prosecutors had been strengthening enforcement of workplace safety violations. For this observed decline in injury rates to be sustained, shifts in program

design and enforcement approaches might be needed, including increased input from and collaboration with organizations that represent the program's target population.

Introduction

The on-going construction boom in New York City has been accompanied by a dramatic surge in injuries and fatalities, with 38 percent of all occupational fatalities in 2016 occurring in the construction industry (New York Building Congress, 2017; Obernauer, 2018). Day laborers in the residential sector are uniquely vulnerable to workplace safety violations, with Latinos experiencing a fatality rate almost double that of all construction workers (Obernauer, 2018; Rathod, 2016). A growing concern related to the non-union construction sector, and a key barrier to progress in the field of workplace safety, is the lack of access to training and labor education that immigrant construction workers experience. Ninety-three percent of construction fatalities in New York City in 2017 were non-union workers (Obernauer, 2019).

Factors contributing to the high vulnerability of day laborers include the minimal union presence in residential construction and the highly fragmented structure of this sector, which comprises large numbers of small contractors and often short-lived companies. The lack of union representation and industry fragmentation lead to a high degree of informality in employment relations, seriously challenging the implementation and enforcement of labor and employment laws, including workplace safety laws (Bernhardt et al, 2009; Eastern Research Group, 2014). On-going research has identified forty-three informal day labor recruitment sites across New York City, with an estimated 3,500 to 4,000 day laborers in total seeking employment at these sites (Cornell Worker Institute, 2016). Previous studies estimated the total number of day laborers in the New York metropolitan area at around 10,000, including workers at informal hiring sites and those who find jobs by other means (Valenzuela, et al, 2006). Recent estimates place the number of immigrant construction workers at above 60,000 for New York City alone (Gonzalez, 2016).

With the goal of abating injury and fatality rates among vulnerable workers in the construction industry and in response to growing demands on the part of labor unions for increased safety measures, The City of New York enacted Local Law 196 in October 2017. This law imposes increased safety training requirements for the issuance and renewal of building permits and seeks to promote access to safety training for the target population, who include mostly immigrant day laborers and other at-risk workers. However, the timetable for the implementation of the new law experienced significant roadblocks related to both access and training capacity.

Building on existing research on benefits of safety training for U.S.-born and immigrant construction workers, both union and non-union (Sokas et al, 2009; Evanoff & Kaskutas, 2013; Dong & Platner, 2004; Williams, 2010), this study assessed the impact of Local Law 196 on safety outcomes in the construction industry in New York City, with a focus on vulnerable workers. It analyzed the implementation of Local Law 196 to identify strategies or policy measures that would more effectively achieve desired outcomes and to determine whether any content or delivery changes would be needed to increase the effectiveness of the newly required safety program.

Objectives

The goal of this study was to evaluate the implementation process of Local Law 196, focusing on outcomes in two main areas: construction workplace safety and access to safety training for the target population (vulnerable and immigrant workers). Specific aims included:

- a. Examine the implementation of Local Law 196 to identify success factors for and barriers to increasing access to site safety training for immigrant workers. Achieving this objective required conducting interviews of key stakeholders, focus group sessions with a sample of the target population, as well as review of relevant documents and statutes.
- b. Assess the effectiveness of the newly required training program in addressing the specific needs of the target population, and determine whether any changes in content, delivery approach, and outreach would be needed to improve safety outcomes. Achieving this objective required conducting focus group sessions with a sample of the target population of non-union or immigrant workers receiving services from three local worker centers.
- c. Estimate whether the implementation of Local Law 196 has contributed to a significant decline in the incidence of injury rates in the local construction industry. To achieve this objective, quantitative data on program outputs and outcomes were obtained from government data sets and reports—including NYC Department of Buildings (DOB) reports—and from worker centers delivering the required training.

Methods

This study utilized quantitative and qualitative strategies to assess policy outputs (e.g. training delivery) and outcomes (e.g. changes in injury rates), as well as to capture workers' and advocates' perceptions of the effectiveness of training programs (Creswell, 2014; Winter, 2006). The study also involved conceptual frameworks that underscore the importance of stakeholder coalitions (e.g. public-private partnerships) for successful implementation and enforcement (Koonse, Dietz & Bernhardt, 2015; Jacobson & Wasserman, 1997).

Data Collection

This research collected both quantitative and qualitative data. The quantitative data included construction injuries statistics, which were used to estimate likely impacts of the policy change on the target population. The qualitative data included perceptions of the safety training program effectiveness and the implementation process. The quantitative data included published statistics from the NYC DOB's monthly and annual summary reports on construction related injuries and fatalities, as well as current employment statistics on local construction employment published by the New York State Department of Labor.

The method for collecting qualitative data on the safety training programs involved the use of convenience and purposive sampling methods to conduct four focus group sessions of non-union and largely immigrant workers who receive legal services and safety training at three local workers centers in New York City. Each focus group included between 16 to 25 participants to achieve a sample size of eighty-two participants (n=82). This sample size is adequate for focus group research, given the estimated size of the target population of 3,500 immigrant construction workers potentially receiving services from local worker centers (Cornell Worker Institute, 2016), and given the likelihood of reaching 90 percent data saturation point with an average of 4.3 focus groups of eight to ten participants (Guest et al, 2016). The focus group questionnaire was designed to capture information about the adequacy of the training

requirements for meeting the needs of the target population, as well as about the effectiveness of the outreach and delivery systems. The questions probed into workers' knowledge gain, changes in workers' attitudes and self-reported behavior related to workplace safety, injury risk reduction, barriers to access, as well as improvements needed in safety training content or enforcement. All of the focus groups were conducted in Spanish and English by researchers who are bilingual and native Spanish speakers. At the beginning of each focus group session, the researcher(s) explained the goals of the study to participants, reviewed their rights and potential risks from participating in the study (as outlined in an oral consent form), and obtained oral consent from workers to participate and be recorded during the session (See Appendix).

Semi-structured interviews were conducted of worker center leaders, government agency representatives in charge of implementing the new policy, and selected members of a joint public-private advisory taskforce (n=6). These interviews obtained factual information and perspectives on the policy formation and implementation processes, as well as about the effectiveness of training programs.

Methods of analysis

Analysis of qualitative data involved synthesizing and extracting themes from the results of the focus groups and interviews. For this analysis, the researcher coded focus group and interview data, linking the raw data to the categories relevant to this study's objectives. All the focus group sessions and some of the interviews were recorded and transcribed. The analysis of themes emerging from focus group and interview data served to identify gaps between the design and implementation of Local Law 196's site safety program and the needs of immigrant construction workers, specifically day laborers. Elements of the logic model framework were used to evaluate process and outcomes of the site safety program (Rossi, Lipsey, & Freeman, 2004).

This study used a time-series design to explore the impact of Local Law 196 on workplace safety outcomes. The timeframe selected for the study included pre-intervention and post-intervention periods. The first provision of the new policy (proctored online training) went into effect October 16, 2017, and all pre-intervention measures come from before that date. (NYC DOB, Information Session). A simple OLS regression analysis was used to estimate impacts of Local Law 196's implementation on injury rates in the NYC construction industry before and after the policy change.

Results

Background on Local Law 196: Goals, Assumptions, and Outcomes

New York City's Local Law 196 sets new training requirements for workers and supervisors at job sites at which the NYC Department of Buildings requires construction superintendents, site-safety coordinators, or site-safety managers. The implementation of the law involved three main milestones. The first was a deadline of March 2018 for workers in construction sites to have a minimum of 10 hours of safety training (OSHA 10). The second was a deadline of December 1, 2019, after which workers will be required to have at least 30 hours of safety training (OSHA 30), and supervisors will need 62 hours of safety training. This milestone was initially set for December 1, 2018, but was postponed twice, first to June 1, 2019, and then to December 1, 2019. The third milestone is in September 1, 2020, when workers will need 40 hours of training to be allowed to work at the regulated construction sites. These forty hours may include OSHA 30 plus an additional ten hours of training in fall prevention (eight hours) and alcohol abuse prevention (two hours). Decisions to postpone the deadline for the second milestone were made after determining that there was insufficient training capacity to satisfy the new requirements.

Structure and Process

The agency in charge of implementing and enforcing Local Law 196 is the NYC Department of Buildings. In September of 2018, the NYC DOB created the Construction Safety Compliance (CSC) Unit, which performs inspections for compliance with Local Law 196 in addition to routine building code compliance inspections. This new unit checks whether workers and supervisors hold the training identification cards, which are proof of completion of the newly required training. As part of its enforcement function, the CSC issues civil penalties and stop-work orders at non-compliant sites.

A key provision of Local Law 196 created a program to increase opportunities for workers with less-than-equal access to training. To implement this provision, NYC DOB developed a two-pronged approach: a) the creation of a pool of course providers approved directly by the department to provide site-safety training and issue site-safety identification cards, and b) a partnership with the NYC Department of Small Business Services (NYC SBS) to certify and oversee training providers for workers with limited access. To achieve its goals under this program, NYC SBS focuses on funding and monitoring training provided by organizations serving day laborers, new entrants (including those recruited through local hiring provisions in affordable housing projects), and minority- or women-owned businesses. The training for less-than-equal access workers is provided to the target population at no cost, with funding from the NYC SBS.

Local Law 196 also provided for the creation of a Site Safety Training Task Force, which would receive and review recommendations from the public in relation to training and would issue recommendations on training content and delivery to the NYC DOB (City of New York, 2017). The Task Force should have fourteen members, in addition to the NYC DOB Commissioner, who functions as the chairperson. Members of the task force include representatives from the New York City Mayor's Office of Immigration Affairs, the Building Trades unions, the unionized employer association (Building Trades Employers Association), non-union employer associations, and one representative from a day laborer organization.

The underlying theory of change of the new policy consists of improving workplace safety outcomes by increasing access to training (especially for vulnerable workers) and by strengthening enforcement. Thus, the administering agencies focused their efforts in providing resources in these two areas, training and enforcement. Program resources and outcomes are discussed in the next sub-section.

Resources, Outputs, and Program Outcomes

Training Capacity: As of June 2019, NYC DOB had approved 72 training providers, including for-profit and non-profit companies, colleges, and local unions. To build training capacity for less-than-equal access workers, the NYC SBS contracted with day laborer and other community-based organizations, providing them with \$5 million in funding since mid-2018. For more than three years (including this funding), worker centers in the five boroughs of New York City were receiving funds through a discretionary budget line of the City Council to provide construction safety training to low-wage and immigrant workers. These two sources of public funding enabled worker centers to meet the surge in worker demand for safety training during the last 18 months. For example, the number of workers who received safety training at the Brooklyn-based day laborer organization Workers' Justice Project (WJP) increased by about 62 percent, from 691 in 2017 to 1,116 in 2018. From January to August of 2019, WJP had already provided safety training to 580 workers. A worker center in Queens, New Immigrant Community Empowerment, provided OSHA 10 and OSHA 30 training for 731 workers from March to December 2018. A worker center in Staten Island, La Colmena, almost doubled the number of workers provided with safety training since 2017, conducting forty-two training sessions and training 704 workers from early 2018 to mid-2019. Overall, these three day labor organizations trained more than 3,100 workers

from early 2018 to mid-2019. Accounting for the efforts of all day labor centers and community-based organizations participating in the program, NYC SBS reported that thousands of workers in the target population received safety training at no cost between mid-2018 and mid-2019 (Personal Communication with NYC SBS Official, August 1, 2019).

Monitoring and enforcement: The NYC DOB expanded its monitoring and enforcement capacity and budget, increasing the number of inspectors and establishing the CSC unit dedicated to safety compliance inspections. As of December 2018, the CSC unit determined that a total of 192 workers did not have OSHA-10 cards at the 167 inspected sites, resulting in the issuing of 482 fines. Overall, 75 percent of all sites inspected by CSC in 2018 were in compliance (Personal communications with NYC DOB Official, June 24, 2019).

Program Benefits: According to worker-center leaders, a benefit from the program has been the opportunity for their members to become certified to teach OSHA 10 and OSHA 30. In their view, having trainers from similar backgrounds lead the classes has significant advantages over training by individuals who do not share the experiences of vulnerable workers. In addition, the teaching of OSHA 30 has empowered workers to participate in the enforcement of safety regulations at the worksites (Personal Communication with Worker Center Leader, January 4, 2019).

Remaining Barriers to Successful Implementation

Remaining barriers to access and lack of training capacity drove the day laborer community to organize protests against the implementation in June 2019 of the second program milestone, which required a minimum of 30 hours of safety training. The milestone was postponed to December 2019. The day laborer community argued that implementation of the second milestone would have resulted in widespread firings of workers who had yet not taken OSHA-30 training (National Day Laborer Organizing Network, 2019).

Training Capacity: All stakeholders interviewed under this study agreed that the implementation timelines were not realistic given the limited training capacity and inadequate infrastructure at the program's start. This explained the two postponements in the deadline for its second milestone. The mismatch between the program goals and timelines exerted significant pressure on day laborer centers' training capacity in particular. The funding provided through an RFP process through the NYC SBS began after the first program deadline of March 2018, and it was not until mid-2019 that the New York City Council passed a law authorizing day labor centers to become certified providers of site safety training (The New York City Council, 2019).

Training Content and Delivery Methods: Day labor advocates believe that the additional 8-hour training in fall prevention, which is part of the 10-hour course required to complete the total of 40 hours of training, is redundant, as this topic is covered by OSHA courses (Personal Communication with Day Labor Center Leader, July 8, 2019). Another shortcoming of the additional 10-hour training is that it is planned to be delivered online. Worker center leaders believe that this format is not appropriate for the target population, due to literacy issues and lack of experience with the use of computers (Personal Communications with Day Labor Center leaders, January 4, 2019; July 8, 2019). Worker center leaders favor the use of popular education methods, as in their experience such methods have been effective in safety trainings for rank-and-file workers (Personal Communications with Day Labor Center Leader, January 4, 2019). Popular education is a participatory approach to adult education, which promotes critical thinking to empower individuals to overcome societal challenges (Mayo, 1997).

Monitoring and enforcement challenges: Although NYC DOB has increased budget allocations for site inspections, the agency has limited experience in monitoring compliance with labor standards, including

worker safety standards. Consistent with broader organizational goals, NYC DOB increased its staff from 1,551 in fiscal year (FY) 2017 to 1,903 in FY19. These additional resources enabled the agency to conduct an increased number of inspections: from 156,508 in FY17 to 203,077 in FY 2019 (NYC Mayor’s Office of Operations, 2019). The agency’s unit in charge of monitoring compliance with LL 196 focuses on certification requirements (i.e. checking whether workers on construction sites have the required certification cards).

As the Department’s primary charge is enforcing building codes focused on public safety, it lacks experience in enforcing labor standards. This has created concerns among immigrant worker advocates, who also indicated that they had minimal input in the policy formation and implementation process. The Site Safety Training Task Force includes only one representative from a worker center serving the target population. According to day laborer center leaders, this underrepresentation of the day laborer community has resulted in missed opportunities to develop collaborative enforcement between their organizations and the NYC DOB (Personal Communications with Day Labor Center Leaders, January 4, 2019; July 7, 2019).

Limited Outreach: For program administrators, outreach to the target population remains the main challenge, as day laborers and other vulnerable construction workers are hard to reach and lack trust in government agencies. Worker center leaders point out that restrictions in the contract funding from NYC SBS prevent the use of these funds for outreach, drastically limiting the centers’ ability to promote access for vulnerable workers (Personal Communications with Day Labor Center Leaders, January 4, 2019).

Training-cost barriers: There is lack of clarity in the language of the new law as to who (employer, worker, or other) is responsible for paying for the newly required training, but de facto, the financial burden and obligation to comply falls on the worker. According to day labor center leaders, the cost of OSHA-30 courses remains as a barrier for thousands of workers who lack access to the no-cost training offered under the Local Law 196 program (Personal Communications with Day Labor Center Leaders, January 4, 2019; July 7, 2019; National Day Laborer Organizing Network, 2019). An unintended consequence of the new law, as relayed by day labor advocates, has involved employers who hire certified trainers to issue 30-hour safety training cards by showing up to the sites and speaking to the workers—but only for a few hours. The employer would then deduct the cost of a full 30-hour course (between \$180 and \$300) from the workers’ pay (Personal Communications with Day Labor Center Leaders, January 4, 2019; July 7, 2019; National Day Laborer Organizing Network, 2019). This lack of clarity in the language of the law has also created confusion among workers, who reported cases in which employers who paid for their training were retaining the certification cards, telling workers that they would lose such cards if they went to work for another employer (Focus Group Session, January 25, 2019).

Remaining language barriers: Although Spanish is the main language spoken by the program’s target population, there is a need to expand access to communities more comfortable in other languages such as Creole, Hindu, Mandarin, Polish, and Russian (Personal Communication with Worker Center Leader, January 4, 2019).

Findings from Focus Groups

Themes that emerged from the focus group sessions with rank-and-file workers included perceived benefits from safety training offered in Spanish; limitations of the Local Law 196 safety program in enforcement systems and other implementation aspects; and the importance of know-your-rights education, particularly for addressing the specific vulnerabilities of non-union immigrant workers.

Participants also identified missing elements for more effective implementation and enforcement, including the need for employer training to promote a safety culture at the workplace and increased emphasis on know-your-rights and leadership education for workers. The vast majority of focus group participants (77 out of 82) had received safety training at no cost at day labor centers in Brooklyn, Queens, and Staten Island. Of those who received safety training, 36 had completed OSHA-10 training and 41 had completed OSHA 30. Except for two English-speaking workers, all focus group participants were Spanish speakers with limited or no English skills. Women workers comprised twenty-two percent (18 out of 82) of total participants.

Benefits of safety training

All participants who had received safety training reported increased ability to identify risks related to handling of hazardous materials, electrocution, falling or rotating objects, falls from heights, and in excavation and demolition jobs. They also reported having gained knowledge about proper use of work tools and personal protective equipment (PPE). According to at least five of the participants, the new knowledge helped them to avoid near-miss accidents. Workers also reported spillover effects of their safety training, as they shared their knowledge with non-trained and new entrant workers at the job sites.

Participants also reported having gained a sense of empowerment from the safety training, and they relayed instances in which they confronted supervisors about unsafe work conditions, possibly preventing accidents. Workers praised OSHA 30 for providing them with knowledge about their rights and the resources to file complaints. One worker commented:

“The training helped me a lot because [now] I take care of myself...I mean, before I did OSHA 30, I’d go to a worksite and do whatever they told me to do. Even if it was at my own risk. But with these trainings, I know what I can do and what I cannot do.” (Focus Group Session, Jan. 17, 2019)

Implementation and Enforcement Shortcomings

While workers recognized the benefits of safety training, they also pointed out the weaknesses of the overall safety program, particularly as they relate to enforcement systems and the workers’ unique vulnerability as non-union and immigrant workers. Most common irregularities that the participants mentioned included employers not providing adequate protective equipment, asking workers not to show up in anticipation of inspections, as well as pushing workers to do unsafe work, and even retaliating against workers who complained. Workers’ comments on this issue included:

“The supervisors would always tell us to go on the scaffold without a harness and lifelines. After I learned in the OSHA training that this was wrong, I told them. But they fired me soon afterwards.” (Focus Group Session, Jul. 11, 2019)

“They tell us ‘if you don’t like it, you can leave.’” (Focus Group Session, Jan. 17, 2019)

“When I was in the process of wearing my protective equipment, a supervisor rushed me and told me ‘are you going to take half an hour to get ready to work half a day for me? You know what... just leave.’” (Focus Group Session, Jan. 17, 2019)

“Safety training is good, but it is useless if there is no strong enforcement against employers who violate the rules.” (Focus Group Session, Jul. 11, 2019)

Participants said that it is common to work for employers who have no knowledge of safety regulations, and that some employers would hold cards that they obtained by taking the online training or had bought in the informal market. Workers felt that current enforcement systems exert more pressure on workers (on

whether they hold training certification cards), than on employers who should be closely monitored for compliance with safety regulations. Workers also mentioned that violations are even more predominant in the informal economy, in which contractors are even more difficult to track and monitor than in regulated sites. Some of the participant's comments on these issues included:

“Sometimes contractors only get the online training for OSHA 30, but they don't [really] know the regulations. But they get the card. So, when I raised the issue with my boss, he told me ‘Don't worry... That doesn't matter. What matters is that I have my card.’” (Focus Group Session, Jan. 25, 2019)

“Contractors don't have Scaffold 4 training. I'm required to have it, and I go to work for people that don't have this training. The City should be more forceful requiring contractors to have training certifications.” (Focus Group Session, Jan. 25, 2019)

“We [day laborers] are facing an employer that is more... informal. The regular employer who has an office may pay you little money, but he would give you basic guarantees... your eight hours of work per day, your lunch hour, etc. ...The informal employer doesn't have an office, or an address... He will not give you any guarantees... He tells you ‘do you want to work? Work for me today, but don't come tomorrow.’” (Focus Group Session, Jan. 17, 2019)

Other concerns about implementation and enforcement issues included the costs of training and the irregularities committed by employers who pay for the workers' training, and deduct the cost from paychecks, or retain the certification cards if workers leave the job. Participants' comments on these issues included:

“There were cases in which the employers told the workers, ‘I paid for the card. The card is mine. If you leave I keep the card.’ Even though they deducted the cost of the training from the paychecks. There has to be a sanction against employers like these.” “Employers should be fined for the practice of retaining safety identification cards.” (Focus Group Session, Jan. 25, 2019)

Perceptions about training delivery methods

Focus group participants expressed concerns about the adequacy of the online format planned for delivery of the additional 10-hour modules on fall prevention and alcohol abuse. These are the ten additional hours needed to complete the total of forty hours of site safety training. Participants mentioned factors such as limited literacy, age, and multiple languages spoken by the target population, which would impede access to training delivered online. Comments from a focus group session (Jan. 18, 2019) included:

“There are literacy issues that would make online training useless... Some workers might be able to navigate a website, but they cannot read well.”

“Age is also a problem when it comes to using computers for online training. ...there are a lot of older workers, for whom technology can be a barrier.”

“[There are] Indigenous populations from Guatemala who don't speak Spanish. They also experience significant barriers for accessing training only offered online.”

“In person training and group training is much superior to online [delivery methods].”

Perceptions about Outreach

Workers and organizers at day labor centers point to the limited outreach that the City government implemented to inform workers and employers about the new requirements, and to provide orientation

about where to get the training. According to focus group participants, the limited outreach created a lot of confusion among employers, who began asking for OSHA 30 cards in March of 2018, when only OSHA 10 was required. Participants and day labor center organizers' comments on this included:

“It was unfortunate, as workers were sent back home because they didn't have the OSHA 30 [card], while the required certification was only OSHA 10. If workers had known or been well informed, they at least could have told their employers. In some cases, workers were not being paid for three weeks in a row, and then this happened on top of the non-payment.” (Focus Group Session, Jan. 25, 2019)

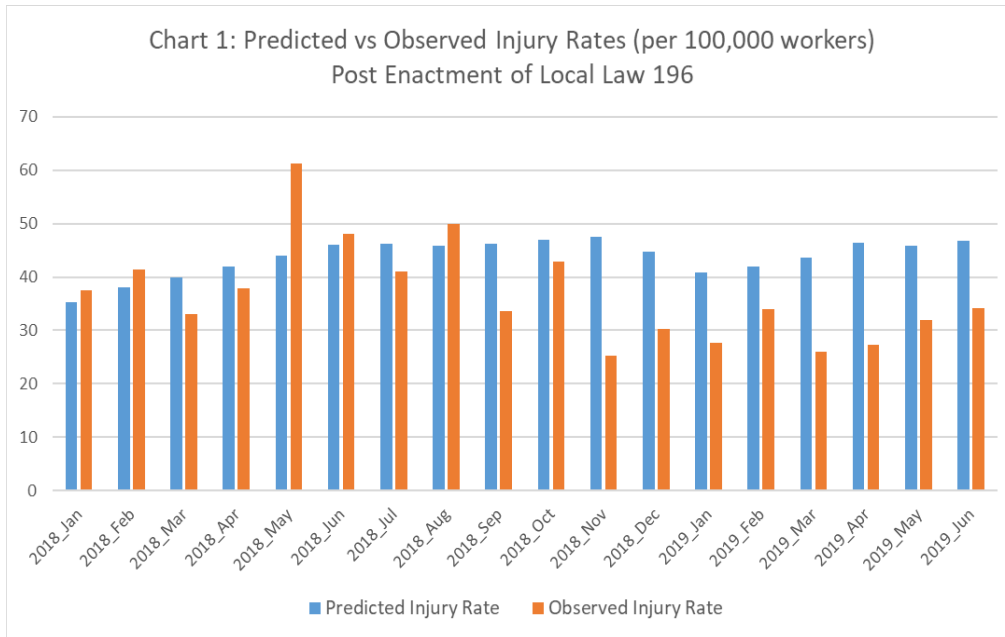
“There was no outreach [during early implementation phase]. And unscrupulous employers took advantage of that. The authorities should have done outreach. If it weren't for the worker center, I would not have known. There was no outreach through the social media, or anything.” (Focus Group Session, Jan. 25, 2019)

Estimating Policy Impacts with Quantitative Data

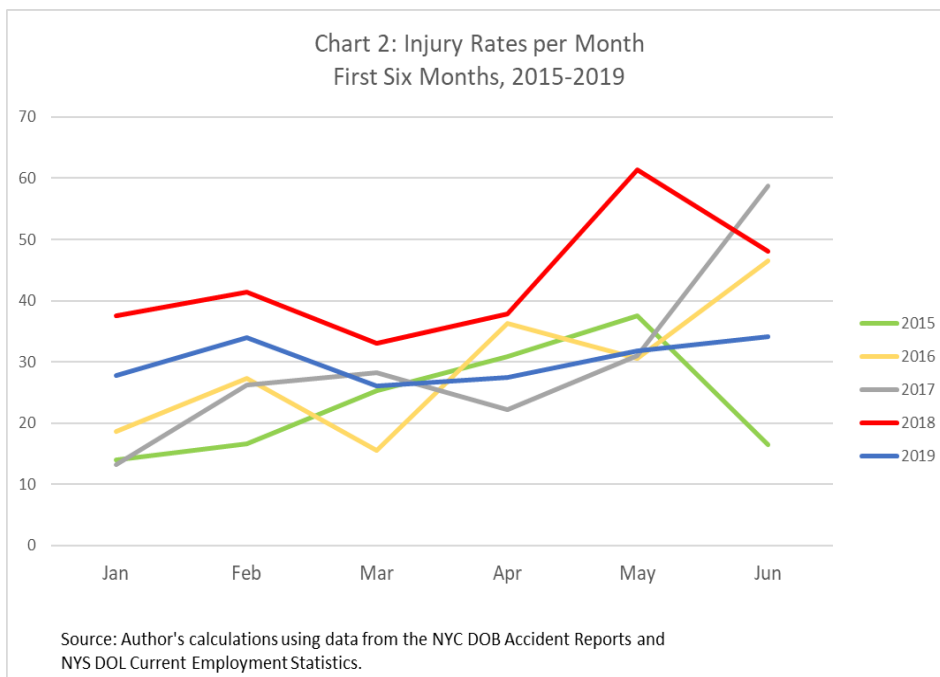
Over the past four years, construction employment grew at an annual average rate of four percent, adding more than 20,000 jobs from June 2015 to June 2019. Defining a pre-intervention period of eighteen months preceding the policy change, and a post-intervention period of eighteen months following the policy change, means for injury rates were estimated and compared. Average injury rates showed a non-significant increase of 3.1 points from the pre- to the post-intervention period. This increase might be explained by the surge in construction accidents during 2018 (NYC DOB Accident Reports).

Using a simple OLS regression, this study found that increases in construction activity are associated with a 0.96 increase in injury rates (per 100,000 workers), holding all other potential confounders constant.¹ Using this estimated coefficient, predicted values of injury rates were produced and compared with their observed values (Chart 1). Chart 1 shows that increases in construction employment functioned as a relatively efficient predictor of changes in injury rates during the first semester of 2018. In late 2018, actual injury rates become systematically lower than the predicted values (which were based on the pre-implementation period trend).

¹ This coefficient is significant at 95% CI.



Simple examination of time-series plot of injury rates (per 100,000 workers) before and after the implementation of Local Law 196 can serve to identify effects that might be associated with the newly required site safety program. Chart 2 shows injury rates for the first six months of the years before and after enactment of Local Law 196. The time series for injuries in 2019 shows relatively more stability than those of previous years, and its values are significantly below those of 2018.



The downward trend in injury rates that this study identified is consistent with workplace safety experts' observations, which indicate that fluctuations in construction activity no longer correlates with variations in the number of fatalities in New York City, "as construction is booming yet fatalities are falling" (Obernauer, 2019, p. 6). However, it is important to qualify these results by indicating that the decline in

injury rates identified in this study can only be partially attributed to the implementation of Local Law 196. Other factors that might underlie the decline in injury rates include the following: effects of the implementation of mandatory OSHA 10 training in large New York City construction projects since 2007 (Oberbauer, 2018); increased enforcement efforts by local district attorneys in collaboration with the state's Department of Labor (New York County, District Attorney's Office, 2015); and increased training capacity of day laborer centers resulting from City funding through the Day Laborer Initiative, which was established in 2015 (Nevarez, 2015).

Study Limitations and Strengths

Because of the two postponements in the implementation of training requirements under Local Law 196, this study (ended in August 29, 2019) could not assess the new policy's full impact on workplace safety outcomes. Nevertheless, this study achieved objectives related to evaluation of the implementation process by analyzing qualitative data on key aspects of the program, including training content and delivery, and impacts on workers' safety awareness.

The delay in the phasing in of the new policy required that this study emphasized the use of qualitative strategies over quantitative tools, focusing on evaluation of the implementation process, rather than estimation of policy impacts. However, this shift in the overall approach did not require major changes in the methods for data collection and analysis originally established. Additionally, this research was still able to explore impacts of the new policy on safety outcomes, as increased training and enforcement resources were deployed since the enactment of the new law.

As a result of implementation delays, it was not possible to obtain measures such as the number of site safety certification cards issued under the program or the number of OSHA cards issued by for-profit and non-profit training institutions. The data from the Department of Buildings' Accident Reports present issues affecting the quality of the estimates in this report: the variations in the number of injuries might be an artifact of the data (i.e. as number of investigations increase due to increased funding, the number of reported incidents also increase). Lastly, limits to generalization of the study findings also arise from possible self-selection bias in the focus group sample.

Relevance and Practical Application

Focus group findings revealed the critical importance of safety training to improve safety outcomes of vulnerable and immigrant workers in the construction industry. These findings are consistent with previous research on the benefits of safety training delivered in the language of the target population, as well as on challenges that are specific to immigrant workers, including language barriers, limited literacy, and fear of employer retaliation (Ruttenberg & Lazo, 2004). The analysis of qualitative data from focus groups and interviews underscored the limitations of safety training in the absence of other injury prevention mechanisms such as effective enforcement of worksite safety conditions and promotion of a safety culture among construction managers. This finding is also consistent with existing research (Schoenfisch, Hester, & Sinyai, 2016).

The qualitative analysis also uncovered a range of areas for improvement in the new safety program, from stronger know-your-rights components of the curriculum to better enforcement and monitoring systems that adequately address the issues that vulnerable workers face. The selection of the NYC DOB as the agency in charge of administering the program was a sensible approach from the perspective that linking compliance to the issuance/renewal of permits would strengthen enforcement. However, NYC DOB's lack of experience in workplace safety and workers' rights necessitates increased collaboration with agencies experienced in monitoring and enforcing labor standards. Training DOB inspectors in

occupational safety and health and worker rights, as well as requiring the use of a worksite safety/worker rights checklist in DOB inspections, might strengthen the current enforcement system. Additionally, this study found that NYC DOB's accident classification system does not adequately capture worksite risks that existing safety trainings address. OSHA emphasizes the "fatal four," but the NYC DOB accident classification system does not clearly account for such factors. The available indicators therefore might not be the appropriate metrics to evaluate impacts of the new policy, and so, some modification of the classification system might be needed.

The quantitative analysis in this study identified likely impacts of the new policy on injury rates. The qualitative analysis indicates that for the observed decline in injury rates to be sustained, shifts in program design and enforcement approaches might be needed, including increased input from and collaboration with organizations, such as day laborer centers, that represent the program's target population.

Presentations, Publications and Dissemination Plan

Findings from this study will be disseminated through research reports, peer-review journals, new curricula, and stakeholder convenings. Cornell University's Worker Institute will convene a stakeholder meeting to share the research results and policy implications with policymakers and representatives from the relevant government agencies, labor unions, and day laborer organizations. The researcher will present papers based on this report at the Labor and Employment Relations Association (LERA), 72nd Annual Meeting, June 13-16, 2020, Portland, OR; and at the United Association for Labor Educators (UALE) Annual Conference, 2020.

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Appendix: Focus Group Guide

Thank you for agreeing to participate in this focus group session as part of my research on “Impacts of Policy Changes on Worker Safety Outcomes in NYC Construction Sites.”

I would like to ask you for permission to record your comments in this focus group. Please note that I will be responsible for transcribing the interview, and that I will destroy the audio files after completing the transcriptions, which I anticipate will take place within two months from now. Do I have your permission to record? Please note that if you do not want your comments to be recorded, you can still participate in this focus group.

I would like to review the informed consent document that I have just given to you, and which describes your rights and potential risks from participating in this study. I would like to record your consent to participate in this focus group session. Do you have any questions or concerns that you would like me to address in relation to your participation in the study?

[AFTER ADDRESSING ANY QUESTIONS OR CONCERNS]: Have I addressed your questions/concerns satisfactorily?

Do you consent to participating in this study?

We can now begin the focus group session. To guide our group conversation, I put together a few open-ended questions, starting with...

- 1- How many of you have taken the newly required training under Local Law 196 (OSHA 30 or OSHA 10)?
- 2- How did you learn about the new requirements or Local Law 196?
- 3- Who among you has been injured on the job (in construction worksites)? Please describe what happened.
- 4- In addition to the hazards related to the accidents you experienced, what other hazardous conditions do you face on the worksites?
- 5- What new knowledge have you gained under the new training requirements of Local Law 196?
- 6- In what ways will this new knowledge help you to improve safety at your worksite?
 - a. What content is particularly helpful to address your specific needs?
 - b. What content is not as helpful? Please explain.
- 7- What additional training or content would be needed to improve the effectiveness of this program?
- 8- What barriers may still exist for workers in general, and immigrant workers in particular, to access this type of training? Did you experience difficulties or encounter any roadblocks to enroll in this program? If so, what were they?
- 9- What barriers, not related to training, may still exist for implementing safe work practices for construction workers in general and for immigrant workers in particular?

