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The NYPD Mobility Initiative and its Impact on Police Officers

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Abstract

The NYPD Mobility Initiative was launched in 2014. The program issued a smartphone to every NYPD officer and installed a tablet in every NYPD patrol car. Applications were developed for the smartphones/ tablets. This quantitative descriptive retrospective pretest-posttest research study examined to what extent did the NYPD Mobility Initiative change police sergeants' perceived ability to perform tasks that make them safer, more efficient, and more effective. The study sought to determine if NYPD sergeants believed that smartphones and tablets, which are part of the Mobility Initiative, fit the tasks they performed daily in the hopes of increasing task-technology fit (TTF).

An online survey was sent to sergeants in the NYPD who had 10-14 years of service by the Sergeants Benevolent Association. The survey consisted of 28 questions and used a 5-point Likert scale. There were 81 respondents. The sergeants in this study perceived that their ability to perform tasks related to safety (Research Question 1) had improved by 82%; their perceived ability to perform tasks related to effectiveness (Research Question 2) had improved by 19%; and their perceived ability to perform tasks related to efficiency (Research Question 3) had improved by 48% since the start of the NYPD Mobility Initiative.

This study recommends improvements be made to the forms application. The NYPD needs to improve communication between dispatchers and patrol officers. Officers should be surveyed to determine what applications need improvement. The NYPD Mobility Initiative should be included in supervision and management reports.

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Dedication

This dissertation is dedicated to my mother, Linda Meyers, who passed away in October 2022. She was a career educator who spent many years teaching in the New York City public school system. She always pushed me to continue my education and begin this journey.

This would not have been possible without the support of my two children, Joshua and Emily. Their encouragement and unwavering love were a tremendous help through this lengthy journey.

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Biographical Sketch

Paul Lichtbraun is currently the Director of Criminal Justice Programs at Monroe College. He was a captain in the New York City Police Department (NYPD) and retired in 2017 after serving for 27 years. Mr. Lichtbraun attended Mercy College from 1999-2001 and graduated with a Bachelor of Science degree in Criminal Justice in 2001. He attended Mercy College from 2004-2005 and graduated with a Master of Science degree in Organizational Leadership in 2005. Mr. Lichtbraun came to St. John Fisher University in the summer of 2019 and began doctoral studies in the Ed.D. Program in Executive Leadership. Mr. Lichtbraun pursued his research on the NYPD Mobility Initiative and its impact on police officers under the direction of Dr. W. Jeff Wallis and Dr. Seth Weitzman and received the Ed.D. degree in 2023.

Abstract

The NYPD Mobility Initiative was launched in 2014. The program issued a smartphone to every NYPD officer and installed a tablet in every NYPD patrol car. Applications were developed for the smartphones/tablets. This quantitative descriptive retrospective pretest-posttest research study examined to what extent did the NYPD Mobility Initiative change police sergeants' perceived ability to perform tasks that make them safer, more efficient, and more effective. The study sought to determine if NYPD sergeants believed that smartphones and tablets, which are part of the Mobility Initiative, fit the tasks they performed daily in the hopes of increasing task-technology fit (TTF).

An online survey was sent to sergeants in the NYPD who had 10-14 years of service by the Sergeants Benevolent Association. The survey consisted of 28 questions and used a 5-point Likert scale. There were 81 respondents. The sergeants in this study perceived that their ability to perform tasks related to safety (Research Question 1) had improved by 82%; their perceived ability to perform tasks related to effectiveness (Research Question 2) had improved by 19%; and their perceived ability to perform tasks related to efficiency (Research Question 3) had improved by 48% since the start of the NYPD Mobility Initiative.

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Chapter 1: Introduction

Background to the Problem

Policing has changed due to technological advances such as the telephone, the automobile, and two-way radios (Strom, 2017). Today, mobile technology is advancing rapidly, and many law enforcement agencies are using this technology to improve efficiencies and reduce crime (Strom, 2017). In 2014 the NYPD launched the Mobility Initiative to bring technological change to the NYPD. This quantitative descriptive retrospective pretest-posttest research study examined to what extent did the NYPD Mobility Initiative change sergeants' perceived ability to perform tasks that make them safer, more efficient, and more effective. If NYPD officers believe that the smartphones, tablets, and software that are part of the NYPD Mobility Initiative fit the tasks that they are required to do daily, task-technology fit (TTF) will go up. Research indicates that this increase in TTF will increase officer performance (Goodhue & Thompson, 1995; Parkes, 2013).

History of Police Technology

In October 1890, Chicago installed the first police call boxes. A call box was a telephone in a locked box. A flashing light on the top of the call box would notify officers to answer the phone. By 1893, Chicago had installed 715 call boxes (Treverton et al., 2011). This is how police officers communicated with headquarters and received their assignments.

In 1921, the first police radio was installed by the Detroit Police Department; by 1931 use had expanded to four police agencies (Poli, 1942). These were one-way radios. The officers could hear the broadcasts but were unable to respond to the broadcaster. The broadcasts were on frequencies designated for music, so the Federal Communications

Commission required police agencies to put music before every broadcast. In the 1930s, agencies began to deploy two-way radios. The two-way radios allowed officers to communicate with headquarters. The Michigan state police started their broadcasts with the phrase "calling all cars" in 1936 (Battles, 2010). "Police radio symbolized excitement, speed, efficiency, centralized command of geographic space, the promise of inevitable apprehension, two-way communication, masculine prowess, and modernity itself" (Battles, 2010, p. 1). In August 1941, the first portable two-way radios were deployed in the field. The units were massive by today's standards, weighing 27 ounces and were 5 ½ x 3 ¾ x 1 ¾ inches overall, so they were not that portable (Poli, 1942).

The Detroit Police Department was the first agency to use police cars in 1906 to catch speeders. Chicago purchased its first police car in 1907 (Scott, 2004). The NYPD added police cars soon after. Today the NYPD has 9,579 vehicles, of which 6,000 are patrol vehicles (NYC.gov., 2023a).

In 1967, the President's Commission on Law Enforcement and Administration recommended that a single telephone number be established to report emergencies. They were against having different numbers for different types of emergencies because it would be easier for the public to remember one number (Nena.org., 2023). In November 1967, the Federal Communications Commission (FCC) met with American Telephone and Telegraph (AT&T) to select a number. At the time, AT&T was the main phone company in the United States. AT&T recommended that 911 be designated as the national emergency code in the United States because it was easy to remember and had never been used by AT&T for any other purpose. By the end of the 20th century, 93% of the United States population was covered by

the 911 system (Nena.org., 2023). In 2017, there were 204,880,732 calls made to 911 in the United States (Neustetter et al., 2019).

In the late 1970s and early 1980s, mobile data terminals (MDTs) were installed in police cars. They consisted of a small screen with a keyboard mounted between the front seats of the police car. The MDT was connected wirelessly to police headquarters. The MDT was then able to access the National Crime Information Center (NCIC), a nationwide database, and in New York, the New York State Police Information Network (NYSPIN). This allowed officers to conduct warrant checks on people and automobiles and communicate with other police cars and headquarters without using the radio (Ioimo & Aronson, 2004). Since the radio was not used, there was a time savings (Nunn, 1994). MDTs were effective in assisting police officers in recovering stolen vehicles (Ioimo & Aronson, 2004)

While mobile data terminals were helpful to patrol officers, they were not removable from the police car. Once the officer left their patrol vehicle, they lost the ability to use the MDT. In New York City (NYC), many officers were assigned to patrol duties on foot in locations such as the NYC subway and public housing developments, so they were not in a police vehicle at all during their tour of duty. Even officers assigned to police vehicles were expected to get out of their police vehicles and engage the community (Insight.com, 2022).

In the 1990s, many police agencies replaced the MDTs with laptop computers, which added features to allow officers to prepare reports in the field. The laptops were attached to the police car to prevent theft. Officers could not remove laptops from the police car. The Office of Community Oriented Policing Services (the COPS Office) sponsored the Making Officer Redeployment Effective (MORE) program between 1995 and 2002 provided federal grants that paid for many of these upgrades (Ioimo & Aronson, 2003). In 1990, laptop

computers were used by 5% of police agencies; by 2003, the number had grown to 55% (Hickman & Reaves, 2006).

NYPD Mobility Initiative

On January 23, 2014, William Bratton was sworn in for the second time as New York City Police Commissioner. He immediately announced plans to bring the department's information technology (IT) capacity into the 21st century (NYC.gov., 2014). "Imagine being a detective; the lifeblood of your work is interviews or contact with complainants, witnesses, victims, district attorney offices, and you don't have a personal phone number, you don't have a voicemail, you don't have an e-mail?" (Crawford & Adler, 2014, p. 23). The 21st century brought a second technological revolution (Harris, 2007). That revolution reached New York City on October 23, 2014; Mayor Bill DeBlasio, Manhattan District Attorney Cyrus Vance, and Police Commissioner William Bratton announced a $160,000,000 NYPD Mobility Initiative (NYC.gov., 2014). The NYPD Mobility Initiative involved the purchase of 35,000 smartphones and 6,000 tablet computers. Every New York City police officer would get a smartphone and every New York City police car would get a tablet computer. The idea behind smartphones is that they would transform the way police officers perform their duties. In 2014 Mayor Bill de Blasio said:

> We must have 21st-century tools to deal with 21st-century threats, and this infusion of new resources will arm our officers with the technology and information they need to fight crime and protect the city against terrorism more efficiently and more effectively. (NYC.gov., 2014, p. 1)

This made the purpose of the NYPD Mobility Initiative clear. It was to have an immediate effect on an officer's efficiency, effectiveness, and safety (NYC.gov., 2014).

Before the mobility initiative, officers in the field received their assignments from radio dispatchers. The radio dispatcher covered two NYPD precincts on one radio frequency. Callers to 911 would talk to a 911 operator. They would type a transcript of the call and send it to a radio dispatcher. This is called a "job." The radio dispatcher would read out jobs to nearby officers, giving them details as they were received from 911 operators. The officers would write down the details of the call on note pads. Officers were often given the bare minimum amount of information with which to work. The information could be that there was a domestic disturbance going on in an apartment. The NYPD may have had significant relevant information about the location, but there was no way to share this information with responding officers. Is this the first domestic disturbance, or is the family well-known to the NYPD? Is there an order of protection prohibiting someone from being in the apartment? Does a resident of that apartment have a warrant? These are important facts for responding officers to know, as they have to assess the situation and decide how they will handle the call (Levine et al., 2017).

If the officers needed additional information, they had to ask the dispatcher for help. They also had to ask the dispatcher to call crime victims or other people who needed police assistance if they could not find them or needed additional information. If they required federal or state records to be checked, they had to ask the dispatcher to check via the radio. Radio dispatchers were often busy, so officers had to wait until the dispatchers had time to process their inquiries. The process delayed police response and made the NYPD less effective, efficient, and more dangerous for responding officers and the public. The process of dispatching police officers had not changed since the 1940s.

As part of the NYPD Mobility Initiative, e-mail addresses were assigned to all 50,000+ members of the NYPD. Before 2014, only 22,000 members of the NYPD had department e-mail addresses, forcing them to use personal e-mail addresses to conduct official business. Officers were told not to use private e-mail accounts to conduct official business for security and legal reasons (NYC.gov., 2014). The NYPD needed access to all official e-mail addresses, and the NYPD must retain those e-mails in case they were required for court. The NYPD trusted officers with firearms but not e-mail addresses (Crawford & Adler, 2014). This also made it difficult for the department, civilians, and other agencies to contact officers. "It really made our officers less accessible to the public" said Jessica Tisch, the NYPD's Deputy Commissioner for Information Technology (Ng, 2016, p. 1). In addition, the NYPD would print important memos and policy changes and hand them out to officers. Worse, logbooks were required to document that officer received these notices. These logbooks had to be stored often for years and were often misplaced. Officers can now receive their official e-mails directly on their smartphones.

Applications

The NYPD issued smartphones have custom-designed applications for the officers to use. The applications are often updated and new applications are added as developed.

911 Application

The 911 application distributes all information received about a 911 call obtained from the call center to officers in the field who are responding to the call. Updates or additional information are automatically sent. Records about the location are automatically checked and sent to officers. Warrants for persons connected to the place are also reviewed. In domestic violence cases, prior history of domestic violence or orders of protection are examined. Thus,

when officers arrive, they have a much better picture of the situation to which they are responding and can be better prepared. They can also call a crime victim or other 911 callers to obtain additional information. The 911 application allows officers to get automatic alerts when selected crimes occur or when a crime occurs at specific locations. This application is designed to increase officer safety, effectiveness, and efficiency by giving officers a much clearer picture of the situation to which they are responding.

Forms Application

The forms application allows officers to complete forms on a smartphone or tablet. In the past, officers were required to handwrite reports and then bring them to the station house. They usually were complaint reports, which were reports made by victims of crime, or vehicle accident reports, which involved people or automobiles involved in accidents with other automobiles. The reports were reviewed by a supervisor and then inputted into the appropriate database by a police administrative aide (PAA). This delay in reporting can be a safety issue as reports are not available to other officers until they have been inputted into the appropriate NYPD database. The officers may not be aware that an automobile was stolen or that a person was wanted by the police for committing a crime. This application also combines several separate databases into one. Many officers felt that the forms application meant “one records management system, finally” (Crawford & Adler, 2014, p. 24). Over time more reports have been added to the forms application, such as aided reports, which is the report when the police are called to the scene of an injured or sick person. This application is designed to increase officers' safety, effectiveness, and efficiency by streamlining and improving report taking.

Video Application

There is a video application that allows videos to be sent to officers. This could be training material covering changes to department rules and procedures or modifications to the law. It can be used by the police commissioner to speak to all officers. It also allows videos of crimes to be sent to officers to identify subjects. This application is designed to increase officers' safety, effectiveness, and efficiency by enabling the viewing of videos in the field and allowing videos to be quickly shown to all officers in the agency.

Messaging Application

A messaging application allows messages to be sent to targeted officers. They can be targeted by rank, unit to which the officer is assigned, or the geographic location of the officer. This geofencing can be very useful in sending out emergency messages quickly to all officers in a specific area. A geofence is a designated, targeted geographic area. The application automatically determines the officers who are in the designated geographical area. An example would be if an officer was looking for a missing child or was searching for a crime suspect, he could quickly send a photo to all officers in the geofenced area. Urgent alerts can be sent to officers and require them to respond that they received the alerts. Wanted posters of individuals who are wanted by the police can be quickly shared among officers. In the past, officers would carry wanted posters of persons who were wanted by police. This application is designed to increase officers' safety, effectiveness, and efficiency by making communication easier and quicker.

Activity Log Application

The activity log application is used to record officers' actions during the tour of duty. All 911 calls they respond to are automatically placed in the activity log along with details of the assignment and its disposition. Officers identify evidence and statements made by arrested

persons in the activity log. Supervisors periodically check and sign the activity log electronically. The NYPD can read officers' activity logs remotely if necessary. The application replaced handwritten activity logs, which have been used since the 1800s (Kilgannen, 2020). This application is designed to increase officers' safety, effectiveness, and efficiency by changing the memo books from handwritten documents to electronic documents that can rapidly be shared in the police department and external partners such as the district attorney's office.

Other Applications

Some additional applications include 311, which gives access to calls made to 311, the nonemergency number in NYC. Officers can get additional information about 311 calls made to a location and any information about the caller. The NYPD University (NYPDU) application has required in-service training courses for officers. The application keeps track of all courses an officer takes. The Enterprise Case Management System (ECMS) application allows detectives and supervisors to access and prepare reports for their active and closed cases. They can update their cases from the field, which enables detectives and their supervisors to collaborate. The Axon view application enables officers and supervisors' access to body camera footage. All patrol officers now wear body cameras. The application allows officers to view bodycam videos immediately. It also allows supervisors to view videos from their subordinates and then prepare required reports. All these additional applications were designed to increase officers' safety, effectiveness, and efficiency.

Smartphones and Tablets

The NYPD initially used Nokia Lumia 640 XL and 830 for its official cell phones. Currently, the NYPD uses iPhone X models. The tablets are Panasonic FZ-G1 Toughpads.

Both devices are ruggedized to prevent damage if they are accidentally dropped and password-protected to prevent unauthorized access. Applications such as 911 or forms require an additional step to enhance the security of sensitive information; the officer must hold their NYPD identification card to the smartphone or tablet. This allows access for 4 hours (Crawford & Adler, 2014). The phones and tablets can be wiped remotely if they are lost or stolen.

Table 1.1 shows 1-day usage of 25,000 smartphones and 1,300 tablets in the field and how often NYPD officers are using the applications on one day in 2014. The 911 application was the most widely used function. Officers reviewed almost 30,000 calls to 911 in the field on their smartphones or tablets. It also meant that the officers were able to leave their police cars to engage the community and still had access to information they needed (Insight.com, 2022).

Table 1.1

One Day Usage of Smartphones and Tablets in 2014

Events	Occurrences
Id-enabled applications	5,716 logins from smartphones
	1,223 from tablets
Searches	20,250 total searches conducted
	8,268 state and federal database queries
911 app	29,257 jobs viewed
Video	848 video views
Flyers	2,662 wanted flyers viewed
VPN access to e-mail	12,000 concurrent VPN sessions

Note. 1-day usage of smartphones and tablets in 2014. Adapted from Culture change and digital technology: The NYPD under Commissioner William Bratton, 2014-2016. Berkman Klein Center Research Publication No. 2016-13, 1-30. https://ssrn.com/abstract=2839004

Police Efficiency

Police agencies should not put effort into a project unnecessarily. They should minimize waste and unnecessary expenses to be considered efficient (Miller et al., 2014). Skogan (1976) defined efficient police agencies as those that convert inputs to outputs with less effort by the organization. Inputs are items such as personnel, police cars, and the number of crimes. Skogan used arrests as outputs, while Drake and Simper (2005) used cleared cases as outputs. Efficient agencies give the public more for the money than they are budgeted. "Thus, efficiency is a concept by which we assess the processing activity of organizations-how they go about facing problems" (Skogan, 1976, p. 278). Skogan also believed that the efficiency of different agencies could be compared with each other.

Researchers have used the data envelopment analysis (DEA) model to analyze police forces' efficiency (Asif et al., 2017; Deangelo et al., 2014; Drake & Simper 2005; Garcia-Sanchez, 2008; Gorman & Ruggiero, 2008). DEA was developed by Charmes et al. in 1978. DEA is a performance ratio where efficiency equals outputs/inputs. The inputs varied based on the researcher but have included the number of police officers, the number of police cars, the number of police stations, or the number of crimes reported to the police. Outputs have included the number of arrests, number of summonses, number of 911 calls answered, or the number of crimes solved. DEA can be used to compare various police agencies to assess their relative efficiency. Researchers have made efficiency a performance indicator rather than a goal of an organization (Ferrandino, 2012).

Today, with the *defund the police* movement, there is pressure to spend less money on traditional police work and spend more money on other programs. The NYPD fiscal 2021 operating budget was reduced by $1,000,000,000, from almost $6,000,000,000 to $5,000,000,000, and money was reallocated to youth and social service programs (NYC.gov., 2020). Many New York City Council members wanted to cut the budget further, but Mayor Bill DeBlasio refused. For the fiscal year 2023 budget, which started July 1, 2022, Mayor Adams proposed that the NYPD operating budget be set at $5.3 billion (Citizens Budget Commission, 2022). It is crucial that the police department be as efficient as possible, and police managers use these resources efficiently (Asif et al., 2017).

The mobility initiative was designed to make patrol officers more efficient by giving them immediate access to many NYPD databases from their tablets and smartphones. They will immediately get notifications of 911 emergency calls, often before radio dispatchers can broadcast the messages. This is intended to shorten police response times to priority calls, therefore making the police more efficient (NYC.gov., 2014). The officers should be better informed and prepared to handle these calls efficiently (Vance, 2014).

Police Officer Safety

Another of the purposes of the NYPD Mobility Initiative is to make it safer for officers by providing them with the same information technology they have at the station house or in patrol cars once they leave their police cars and are in the street. The Federal Bureau of Investigation (FBI) reported that in 2019, 48 law enforcement officers were feloniously killed, and 56,034 were assaulted while performing their duties. Police agencies are trying to reduce these numbers. Smartphones and tablets allow officers to interact with the public easier (NYC.gov., 2014). Officers were given a cell phone number and an e-mail address that they

can give to the public to contact them. In the past, individuals would have to call the precinct and leave a message. This can be dangerous for crime victims who need to speak to an officer who is handling their case immediately. These crime victims would have to call 911 and have an officer who was unfamiliar with their case respond. This caused delays in police response which could allow perpetrators to escape.

Police officers receive real-time data from 911 calls that are immediately sent to tablets and smartphones. They also get any notes made by 911 dispatchers. A complete history of any previous 911 calls is also generated. The officers can respond to calls or patrol on foot and have access to more information which will lead to enhanced officer safety (Insight.com, 2022). The NYPD Mobility Initiative was designed to make it safer for officers by giving them a complete picture of what they are responding to (NYPD, 2014).

Police Effectiveness

Skogan (1976) defined effective police agencies as agencies that "meet challenges put to them, satisfy demands for service, or solve problems" (Skogan, 1976, p. 278). Inputs are the police department's budget and the number of crime or services, such as responding to vehicle accidents, that the agency is expected to provide. Effective police agencies convert this budget into outputs that are desired by the community. Skogan defined crimes and number of personnel as inputs and arrests as outputs. The goals may be to solve crimes, improve the flow of traffic and reduce domestic violence, to name a few. The public expects the police to solve crimes and arrest criminals. The agency is then meeting its goals. The ratio between inputs and outputs is the police agency's effectiveness (Skogan, 1976).

Another definition of police effectiveness has to do with the public's perceptions. If people believe that they are safe, the police are effective (Legrand & Bronitt, 2012). On

February 13 and 14, 2021, four homeless people were stabbed, two of whom died in the NYC subway system in separate incidents. NYC subways Interim President Sara Feinberg called for an additional 1,000 officers to be assigned to the subways (Berger & Chapman, 2021). This request was made even though crime was down 48% in the NYC subways year to date (NYPD, 2021). The extra officers were requested to address the fear of crime that many subway riders felt (Berger & Chapman, 2021). The riding public believed that the subways were dangerous; therefore, the police were ineffective. Officers who patrol the subways do so on foot; therefore, they have no access to a police car, or the police car may be too far away to be of any use. The NYPD Mobility Initiative gives these officers access to more information that will make the NYPD more effective.

A similar situation occurred in the NYC subways in the 1990s. William Bratton was appointed as chief of the NYC Transit Police in April 1990. Crime had risen 25% in the subways from 1987 to 1990, which was double the crime increase for the rest of the city (Kim & Mauborgne, 2003). However, major crimes committed in the NYC subways were only 3% of total NYC major crimes. An estimated 170,000 people jumped the turnstiles daily, costing the city $80 million annually (Kim & Mauborgne, 2003). Aggressive panhandlers and homeless individuals had a strong presence in the subways. The riding public believed that the police were ineffective and that the subways were the most dangerous place in the city, so ridership dropped (Kim & Mauborgne, 2003).

To attempt to determine if New Yorkers felt safe in their communities, the NYPD, in 2018, hired a company called Euclid to create the Sentiment Meter. The company sent out hundreds of thousands of online surveys to NYC residents' cell phones. The surveys were ads that popped up on Facebook and Instagram. The survey asked if residents felt safe in their

communities, were they treated with respect by the local police, and did they believe the police acted based on facts, not their own biases. They also made robocalls to older New Yorkers. The company looked for upward or downward changes in people's attitudes. The data were broken down based on the precinct and sector the resident lived in (Weichselbaum, 2018). Precinct commanders were given the data to employ extra police resources as needed. The sentiment meter found that respondents trusted rating in the NYPD was 6.1 in September 2016 and went up to 6.6 in October 2019. The respondent's safety score dropped from 6.6 to 6.3 during the same period (Wiggers, 2020) . The scale was 1-10, with a higher number meaning higher trust of safety. The program was canceled in August 2020 in the wake of the George Floyd murder.

Problem Statement

Prior to the implementation of the NYPD Mobility Initiative, New York City police officers were receiving their assignments from a radio dispatcher. This process had not changed significantly since the 1940s. Officers were required to use the radio for queries of state and local databases. Busy dispatchers were often unable to conduct these inquiries. Notes about assignments were written on notepaper. Officers would carry wanted posters that contained pictures of people wanted by the police for various crimes and who might be in the area. This was making the NYPD less efficient, less effective, and more dangerous for officers and the public (NYC.gov., 2014).

Ideally, information should flow to and from officers in the field even when they leave their police cars. Smartphones and tablets can augment and, in some cases, even replace a mobile digital terminal (Insight.com, 2022). Thus, officers who patrol on foot or in places like the subway can still use the advanced technologies that these devices offer.

The purpose of the NYPD Mobility Initiative is to have an immediate effect on officer safety, effectiveness, and efficiency (NYC.gov., 2014). The program allows officers to use their NYPD smartphones to perform many tasks using specially designed applications (Kilgannen, 2020). However, for the NYPD Mobility Initiative to be effective, officers must use their smartphones and applications productively. This quantitative descriptive retrospective pretest-posttest study examined the degree to which NYPD sergeants perceived that the NYPD Mobility Initiative has made the job of police officers safer, more effective, and efficient. If NYPD officers believed that the smartphones and tablets that are part of the NYPD Mobility Initiative fits the tasks that they are required to conduct daily, this will be reflected in TTF, which will increase. Research indicates that improved TTF should reflect improved officer performance (Goodhue & Thompson, 1995; Parkes, 2013).

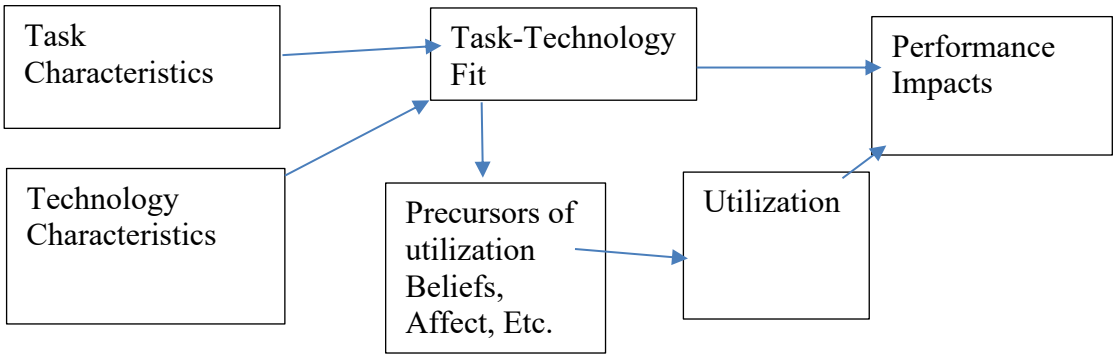
Theoretical Rationale

This quantitative descriptive retrospective pretest-posttest research study examined the degree to which NYPD sergeants perceived that the NYPD Mobility Initiative had made officers' jobs safer, more effective, and efficient. The theoretical framework that supports this study is the task-technology fit theory. TTF was developed by Goodhue in 1988 and stated that for information technology to improve individual performance, the technology must fit the functions performed by individuals who use the technology. TTF is the degree the technology assists a worker in completing their job. If there is a growing gap between technology functionality and a worker's tasks, TTF is reduced (Goodhue & Thompson, 1995; Ioimo & Aronson, 2003). Goodhue (1995) believed that users of technology can evaluate TTF.

Figure 1.1 shows the TTF model developed by Goodhue (1995). Goodhue believed that for worker performance involving technology to go up, a worker must believe that the technology they are asked to use fits the tasks they are required to perform. The worker will then use the technology, and their performance will increase. If the worker believes that the technology does not fit the tasks they are required to perform, then, TTF will decrease. This will affect performance (Goodhue & Thompson, 1995).

Figure 1.1

Task-Technology Fit



Note. Adapted from Task-Technology Fit and Individual Performance, by D. Goodman & R. Thompson, 1995, *MIS Quarterly, 19*(2), 213-236. https://doi.org/10.2307/249689

Task characteristics are jobs that the end users must perform (Cane & McCarthy, 2009). In this proposed study, police officers use smartphones/tablets to complete required reports, respond to 911 calls, and get background information on those 911 calls, among other functions. These are tasks that a police officer may be asked to complete in their tour of duty.

Technology characteristics are the actual tools used to complete tasks. Technology characteristics also include agency policies and procedures (Cane & McCarthy, 2009). This

study examined the NYPD Mobility Imitative, which includes smartphones and tablets and related applications.

Task-technology fit is defined by Goodhue and Thompson (1995) as "the correspondence between task requirements, individual abilities, and the functionality of the technology" (p. 218). If a technology user feels the technology helps a worker complete their job, then TTF is increased. If there is a gap between the functionality of the technology and the worker's tasks, then TTF is reduced (Goodhue & Thompson, 1995).

Precursors of utilization refer to the user's expected consequences (good or bad) for using the technology. It may include the social norms of the organization and the habits or accepted practices of the users of the technology. It also includes factors that make the technology easier to use. (Cane & McCarthy, 2009). Utilization refers to the end users using the technology to perform their job. It measures usage, not length of usage (Cane & McCarthy, 2009). Performance impacts are increases or decreases in efficiency, effectiveness, or improved user performance due to an end user using a technology (Cane & McCarthy, 2009). Higher performance impacts will increase effectiveness and efficiencies (Goodhue & Thompson,1995).

In 1995 Goodhue conducted a study where he combined the utilization focus and the task-technology fit focus of TTF. Figure 1.1 shows this model of TTF. The utilization focus states that user attitudes and beliefs dictate if they will use available technology. Goodhue believed that this increased utilization led to improved performance. The task-technology fit focus states that if users of technology feel that the technology helps them perform their job tasks, the user's job performance will go up. Goodhue developed eight task-technology fit factors to measure TTF. They include data quality, locatability, authorization, compatibility,

ease of use/training, production timeliness, systems reliability, and user relationships (Goodhue & Thompson, 1995). Quality of data refers to the accuracy of the data the user is accessing. Locatability is the ability of the user to find the data they need to perform their job. Authorization is the steps a user must take to log into the technology. Compatibility is the ability for users to use data between various systems. Ease of use/training is how easy the system is to use and is there training available if the user needs it. Production timeliness refers to the amount of time the technology takes to give the end user what they are looking for. System reliability refers to the technology working as intended. Relationship with users refers to the information systems department's relationship with end users (Goodhue & Thompson, 1995).

Goodhue conducted a study of mobile computers in police cars in 1995 and found that if the technology has a high TTF, it will lead to better performance. Goodhue also found a difference between front-line personnel's view that the data from the mobile computers did not fit their needs, while upper management felt the data did fit their needs. This may be because upper-level management saw the data after all the problems had been resolved by front-line personnel. TTF explains this discrepancy (Ioimo & Aronson, 2005).

While Goodhue studied TTF and individual performance, Zigurs and Buckland (1998) studied TTF and group support systems effectiveness. A task/technology fit should result in the group performing better. For a given task, if the technology and task are aligned, group performance will go up (Zigurs & Buckland, 1998).

Since the work of Goodhue and Thompson in 1995, many studies have applied TTF. Shirani et al. (1999) used TTF to compare two communication technologies used by groups to communicate synchronously and asynchronously, e-mail and a group support system. The

researchers found that the group support system generated more ideas; however, e-mail allowed the users to do a deeper analysis. Klopping and McKinney (2004), used TTF and TAM to evaluate e-commerce. The researchers found that a combined TTF/TAM model predicted online shopping (Klopping & McKinney, 2004). Staples and Seddon (2004) used Goodhue's earlier work to study technology use in settings where the use of technology was voluntary and when the use of technology was not voluntary. They found strong support that TTF affects performance (Staples & Seddon, 2004).

If the NYPD officers believe that the smartphones and tablets that are part of the NYPD Mobility Initiative fit the tasks they must perform daily, TTF should go up. That should increase officer safety, efficiency, and effectiveness.

Purpose Statement

The purpose of this quantitative descriptive retrospective pretest-posttest research study was to examine to what extent does the NYPD Mobility Initiative change sergeants' perceived ability to perform tasks that make them safer, more effective, and more efficient. An online survey was conducted to determine if these sergeants believe that the devices and related software that are part of the NYPD Mobility Initiative help or hinder their ability to perform various police related tasks that are performed on a regular basis. If the sergeants believe that the technology fits the tasks that they are required to perform, TTF will increase, which should increase officer safety, efficiency, and effectiveness.

Research Questions

This quantitative descriptive retrospective pretest-posttest research study will address the following questions:

1. To what extent did the NYPD Mobility Initiative change officers' perceived ability to perform tasks that make them safer?
2. To what extent did the NYPD Mobility Initiative change officers' perceived ability to perform tasks that make them more effective?
3. To what extent did the NYPD Mobility Initiative change officers' perceived ability to perform tasks that make them more efficient?

Significance of the Study

This quantitative descriptive retrospective pretest-posttest research study attempted to examine if NYPD sergeants perceive that the 2014 NYPD Mobility Initiative has achieved its goals. Its stated goals are to make the job of officers safer and improve their effectiveness and efficiency. This study surveyed sergeants to determine if they believed that the technology that is part of the NYPD Mobility Initiative fits the tasks that they are required to do daily. If they perceive that the technology fits their daily tasks, then TTF will increase, and officer safety, effectiveness, and efficiency will go up. There is a lack of literature on smartphone and tablet use by police officers while performing their duties. This study may help decision-makers in criminal justice and government, including police chiefs, mayors, and governors who are considering investing in smartphones and tablets for police officers to improve their agency's effectiveness and efficiency and improve the safety of their officers. The study may be of interest to the public as there has been pressure to reduce police budgets since the death of George Floyd.

Definitions of Terms

Activity logs – a chronological listing of an officer's activity for the tour.

Electronic Case Management System (ECMS) – a detective bureau system where investigations are documented.

ID enabled applications – applications of a sensitive nature that require verification of officers' identification to use the application.

Jobs – 911 calls that require a police response.

New York State Police Information Network (NYPSIN) – A computer system run by the New York State police that allows access to NYS Department of Motor Vehicle records and National Crime Information Center (NCIC).

Orders of protection – are issued by a court to limit the behavior of someone who harms or threatens to harm another person.

PAAs – Police administrative aids; they are civilian employees of the NYPD who assist with clerical functions.

Radio dispatchers – civilian employees of the NYPD who send police officers to 911 calls.

Warrants – a document issued by a legal or government official authorizing the police or some other body to make an arrest.

VPN – a virtual private network. A secure network is required to access NYPD e-mail accounts.

Chapter Summary

The first technological revolution involved telephones, two-way police radios, and automobiles (Byrne & Marx, 2011). These innovations changed the way police operated at the beginning of the 20th century. People were encouraged to call 911, and the police would respond to these calls by automobile.

We are currently in a second technologic revolution (Harris, 2007). In 2014 that revolution came to the NYPD with the start of the NYPD Mobility Initiative. The NYPD Mobility Initiative involved the purchase of 35,000 smartphones and 6,000 tablet computers (NYC.gov., 2014). The program allows officers to use their NYPD smartphones to perform many tasks using specially designed applications (Kilgannen, 2020).

This quantitative descriptive retrospective pretest-posttest research study examined the degree NYPD sergeants perceived that the NYPD Mobility Initiative has made the job of officers safer, more effective, and more efficient by conducting an online survey. If NYPD officers believed that the technology fits the tasks that they are required to perform daily, TTF will increase, which should improve officer safety, effectiveness, and efficiency.

Chapter 2 provides a review of the literature. Chapter 3 details the research methodology. Chapter 4 provides the findings of the research and Chapter 5 outlines the implications of the research and recommendations for the future.

Chapter 2: Review of the Literature

Introduction and Purpose

On October 23, 2014, Mayor Bill De Blasio, Manhattan District Attorney Cyrus Vance, and Police Commissioner William Bratton announced the NYPD Mobility Initiative. This $160,000,000 program provided 41,000 mobile devices to the NYPD. Every NYPD officer was issued a smartphone, and every NYPD patrol car had a tablet computer installed. The purpose of the NYPD Mobility Initiative was to make police officers and the public safer and improve the effectiveness and efficiency of the NYPD (Vance, 2014).

The NYPD Mobility Initiative was designed to make the NYPD more efficient and effective by giving police officers access to all NYPD databases in the field. The smartphones and tablets have specially designed applications designed to streamline many NYPD processes. Many of these NYPD processes had not changed since the 1940s.

The purpose of this quantitative descriptive retrospective pretest-posttest research study was to examine the extent that NYPD sergeants perceived that the NYPD Mobility Initiative has made the job of police officers safer, more effective, and efficient. For the NYPD Mobility Initiative to be successful, officers must use their smartphones and tablets to achieve the program's goals.

The literature review examined relevant scholarly articles on police efficiency in the United States and internationally to determine how researchers have defined police efficiency and efficient police departments. Police use of technology was examined to determine how police departments are using new technology. The task-technology fit theory was examined to

determine how researchers have used the theory in the past. Police effectiveness in the United States and internationally was examined to determine the definition and how researchers have defined police effectiveness.

Police Efficiency in the United States

Police efficiency is the police performing their jobs properly. Efficiency is using police resources without waste (Miller et al., 2014). Efficiency is providing police services at the lowest cost (Verschelde & Rogge, 2012). Gorman and Ruggiero (2008) studied the efficiency of state police in 49 states using the data envelopment analysis model. DEA was developed by Charmes et al. (1978). It is a performance measurement technique that measures the relative efficiency of decision-making units (DMU). DMUs in this study were state police forces. For their analysis, the researchers used three outputs, crime rates for murders, other violent crimes, and total property crimes in each state. For the inputs, the researchers used the number of sworn officers, numbers of civilian workers, and the number of vehicles used by the agency.

Gorman and Ruggiero (2008) found that most state police forces were technically efficient; however, 30% of state police forces were inefficient relative to other state police forces. The researchers felt that these agencies could reduce their inputs by having fewer personnel or automobiles. Those agencies could cut their budgets and therefore be more efficient.

DeAngelo et al. (2014) studied the efficiency of 50 municipal police departments in New York State using DEA. The inputs were the number of police officers, civilian employees, number of police vehicles, and number of police stations. The outputs were the

number of violent crimes, the number of property crimes, and the number of functions to which the police department responded.

DeAngelo et al. (2014) found that 30 municipal police departments were at maximum efficiency. The remaining 20 municipal police departments could reduce violent crimes by 173% and property crimes by 64% if they adopted practices used by the more efficient agencies. The researchers found the crime rate was affected by the number of community policing officers, number of employment screening questions, number of mobile computing devices employed, and number of officers in drug units (Deangelo et al., 2014).

DEA is a proven model to examine police efficiency in the United States (Deangelo et al., 2014; Gorman & Ruggiero, 2008). DEA allows researchers to use different DMUs in their analysis which allows comparisons of police departments even if they are in other geographic locations or have very different missions.

International Police Efficiency

Asif et al. (2018) used DEA to measure police efficiency. The researchers considered the output of the police to include things such as average response rates to crimes or other emergencies, crime clearance rates, preparing reports and documents for the public and the courts, and the number of officers assigned to fixed posts. The inputs they used were personnel, police equipment such as police cars and police stations, and operating expenses. DEA compares inputs/outputs of different units. DEA can also identify underutilized resources and make recommendations to improve efficiency (Asif et al., 2018).

Asif et al. (2018) studied police in Lahore, which is the second-largest city in Pakistan. The city has 71 police stations, and a researcher went to each station and was given the necessary data by a senior officer. The more efficient police stations had more outputs. This

study created a quantitative framework that can be used to measure police efficiency in other countries (Asif et al., 2018).

Garcia-Sanchez (2008) studied the efficiency of local police in Spain using DEA. She divided her study into two distinct parts. The first part was public safety, which is the crime control function of the police, and road safety which is the traffic control function of the police. The researcher selected a purposeful representative sample of 29 cities in Spain. The inputs for the DEA analysis were the number of officers and the number of police vehicles. The outputs for the public safety function were the number of miles driven by police, arrests made, items recovered, and the number of interventions. For road safety, the output was the number of summonses issued, vehicles removed from the highway, breathalyzer tests administered, and accident reports prepared (Garcia-Sanchez, 2008).

Garcia-Sanchez (2008) found that 12 towns (41.38%) were efficient for public safety, and eight towns were efficient for road safety. Four towns were efficient in both public safety and road safety. The researchers found that there were 21% too many officers and 22% too many police vehicles for public safety (Garcia-Sanchez, 2008). There was 5.5% excess police officers and cars for road safety (Garcia-Sanchez, 2008). Garcia-Sanchez recommended that 25 of the towns redeploy officers to other functions to make them more efficient in public safety or road safety.

Drake and Simper (2005) studied efficiency of offenses cleared by English police by using DEA. They examined data from 293 police precincts from 39 different cities in England. The inputs were number of offenses reported to the police and the outputs were offenses cleared by the police. Drake and Simper found a large difference in efficiency even in precincts within the same city. The researchers compared the relative efficiency of the

precincts and recommended that the more efficient precincts share best practices with the less efficient precincts.

DEA has been used to study police efficiency internationally by Asif et al. (2018), Garcia-Sanchez (2008), and Drake and Simper (2005). Administrators could use the data they found to redeploy police personnel. The redeployment would make those police departments more efficient by having the correct number of officers performing various functions. Sharing best practices can make inefficient precincts more efficient.

DEA has been shown to be a proven model to examine police efficiency in the United States and internationally. It allows comparisons among police agencies even if their missions are entirely different. It also enables police chiefs and other interested parties to properly assign personnel and identify efficient precincts so they can share best practices with inefficient precincts.

Police Officer Safety

According to the FBI, the Law Enforcement Officers Killed and Assaulted Data Collection, 73 law enforcement officers were killed feloniously in 2021. "The wellness and safety of law enforcement officers is critical not only for the officers, their colleagues, and their agencies but also to public safety" (U.S. Department of Justice, 2015, p. 18).

A study by Pang and Pavlou (2019) examined if information technology can help keep police officers safer. The researchers obtained data about officers killed and assaulted from the FBI and demographic and socioeconomic data from the U.S. Census Bureau. They created a dataset of 16,320 observations from 4,325 police departments across the United States over 6 years. They divided police IT use into three areas – crime intelligence, crime prediction, and crime investigation. Crime intelligence includes gathering information from internal and

external sources about crime. Crime prediction involves obtaining information from internal and external sources to identify patterns and trends to determine where crime might occur. Crime investigation involves solving crimes by obtaining evidence and arresting perpetrators. They also interviewed a police captain to obtain a firsthand account of how IT helps officers in the field (Pang & Pavlou, 2019). Pang and Pavlou found that IT use for criminal intelligence, prediction, and investigation is associated with a 42-50% reduction in the number of officers killed or assaulted. For a large police department that serves over one million people, it means a reduction of up to 199 assaults/deaths (Pang & Pavlou, 2019).

A study by Soltes et al. (2021) assessed the vulnerability and riskiness of police officers working in the Slovak Republic and the Czech Republic from 2004 to 2019. This quantitative study analyzed 152 police departments that employed 2,192 police officers in the Slovak Republic. The results were compared to officers in the Czech Republic since they performed similar work. In both countries, municipal police forces were required to report data to the Ministry of the Interior on the numbers of complaints, interventions, the physical force used, attacks, injuries to police officers, and offenses solved. They also examined environmental factors such as noise, working in heat or cold, and physical and mental loads. These factors were analyzed based on likelihood, severity, and risk.

Soltes et al. (2021) found a relationship between the number of officers and the number of officers assaulted. As the number of officers went up, so did the number of officers assaulted. The researchers felt that additional officers were interacting with the public more, which led to more assaults. They also found that in 2019, the probability of a police officer in the Slovak Republic being assaulted was 2.16%, and the likelihood of being injured from that assault was 43.64%. (Soltes et al., 2021). The researchers found that 2019 was the most

dangerous year for municipal police officers. They recommended that police officers be moved from Category 2 to Category 3 of the work riskiness scale. In the Slovak Republic, the Protection, Promotion and Development of Public Health Act of 2007 set work riskiness scales. Categories 3 and 4 in the scale were considered hazardous occupations and 1 and 2 were considered non-hazardous. After the officers were moved to Category 3, they received more health care and improved their pensions and benefits in the Slovak Republic (Soltes et al., 2021).

A study by Tiesman et al. (2018) examined nonfatal injuries to law enforcement officers from 2003 to 2014 to determine any trends and determine nationwide statistics. The FBI currently tracks nonfatal assaults on police officers; however, participation by police agencies is voluntary, so the statistics are incomplete. The nonfatal injury numbers were obtained from the National Electronic Injury Surveillance System-Occupational Supplement. These data are inputted by hospital emergency room staff.

Tiesman et al. (2018) found that there were 669,100 law enforcement officers treated at emergency rooms for nonfatal injuries from 2003-2014. The overall rate was 635 per 10,000 full-time equivalents, which was 3 times higher than all other U.S. workers, with a rate of 213 per 10,000 full-time equivalents. Assaults were responsible for 35% of nonfatal injuries, bodily reactions and exertions were 15% of nonfatal injuries, and transportation incidents 14% of nonfatal injuries. They also found that assaults against law enforcement officers went up from 2003-2011 (Tiesman et al., 2018). Assaults occurred during interactions with the public, so the researchers believed those police departments must improve their tactics in dealing with the public (Tiesman et al., 2018).

The FBI (2021) reported that 60,105 law enforcement officers were assaulted in 2020, and 73 were killed in 2021 in the United States. Police officers have had a high rate of death and nonfatal injuries compared to other workers (Tiesman et al., 2018). Police officers today are relying more on technology to improve their safety (Insight.com, 2022). A study by Pang and Pavlou (2019) found that IT use led to a significant reduction in line of duty injuries to police officers. One of the purposes of the NYPD Mobility Initiative is to improve officer safety.

Police Effectiveness

Police effectiveness can be examined using several metrics. One commonly used metric for examining the crime control function of the police is clearance rates (Baughman, 2020). Clearance rates are the number of reported crimes are solved by the police. The police, however, perform many other functions, such as responding to vehicle accidents or providing other police services that a community desires. These are harder to quantify, however the public wants an effective police department.

Agrawal et al. (2003), examined the effectiveness of mobile computer terminals in police work. They were specifically looking to see how mobile digital computers affected police officers' work environments and how they affected deterrence and job satisfaction. They gave a survey to 160 patrol officers in a major metropolitan police department in New York that had mobile computer terminals in their patrol cars.

Agrawal et al. (2003) found that the mobile digital computers saved the officers considerable time as they made communication easier. The improved communication resulted in the officers getting more information, which improved the officers' job satisfaction. The time savings from conducting license plate checks had a moderate influence on deterrence.

The officers conducted 177,833 license plate checks before the installation of the mobile digital computers and 260,001 after they were installed (Agrawal et al., 2003). The researchers believed that this increase was the equivalent of redeploying 62 officers for a year (Agrawal et al., 2003).

Danziger and Kraemer (1985) examined the impact of computer-based systems on individual police detectives and their work. The researchers were more interested in effectiveness than efficiency. A questionnaire was given at random to detectives from 40 United States police forces. Three hundred seventy-four detectives responded that they used computers or received computer-based information. Danziger and Kraemer found that 39% of the detectives who answered the surveys used computers for all their casework, and 63% of detectives used computers for most of their casework. The detectives were asked how computers assisted them in their last 10 cases. The detectives reported that 37% of the cases would have been unworkable without computers, and 64% of arrests were aided by computers. For case clearances, the results were higher at 66% (Danziger & Kraemer, 1985).

The FBI defines a case clearance as a case that was cleared by an arrest or cleared by an exceptional means like the death of a suspect (FBI, 2017). This means that police effectiveness increased due to technology. The researchers believed that the results would have been similar for other workers such as probation officers, social workers, and others who perform casework.

Koper et al. (2015) studied whether technological advances have made police more effective in reducing crime. The researchers selected 18 crime hotspots in a suburban area. They randomly selected nine of these crime hotspots to receive additional police patrols over

11 weeks. The researchers studied mobile IT use by the officers who patrolled these areas by interviewing the officers and examining the officers' memo books.

Koper et al. (2015) found that the officers used mobile technology to check automobile license plates and to conduct warrant checks on individuals during car stops and field interviews. The officers did not use the technology for crime prevention. The use of mobile computing had little or no direct effect on crime (Koper et al., 2015).

Skogan (2009) studied concern about crime and confidence in the police. The researchers were attempting to determine if the police reassured the community or whether they were held accountable for the crime increase. The researchers were studying the reassurance model and the accountability model. The reassurance model states that public confidence in police negates their concern about crime. The accountability model states that the public concern about crime will lessen their confidence in the police. They conducted surveys in Houston, Texas after the implementation of a community policing program. The Police Foundation created the surveys, and they were later used in Baltimore, Birmingham, Denver, Madison, Oakland, and Newark. Residents in four selected areas were interviewed before the start of the community policing program and again 1 year later (Skokan, 2009).

Skokan (2009) found that confidence in the police increased over 1 year, and concern about crime declined because the Houston police department had just started community policing programs, which deployed more visible officers on foot patrol during the period. The researchers also noted that since they interviewed people before and after the community policing programs started, the community may have been more knowledgeable about them (Skokan, 2009).

Maurdoukoutas and Mourdoukoutas (1997) studied the efficiency and effectiveness of the New York City Police Department. They examined 72 individual precincts to determine if they were efficient and effective. The researchers used DEA to calculate efficiency. The inputs were police personnel and capital. Capital refers to police cars and other vehicles. The outputs were enforcement and non-enforcement police services. Enforcement included arrests, and non-enforcement included vehicle accidents to which the police responded.

Mourdoukoutas and Mourdoukoutas (1997) found that 36% of the precincts in NYC were inefficient. By NYC borough, 52% of the precincts in Brooklyn were inefficient, 35% in Manhattan, 25% in the Bronx, and 24% in Queens (Mourdoukoutas & Mourdoukoutas, 1997). In the Bronx, the 49th, 50th, and 52nd precincts were found to be inefficient. The researchers believed that there was a potential savings of $6,102,315 at those three precincts (Mourdoukoutas & Mourdoukoutas, 1997).

Mourdoukoutas and Mourdoukoutas (1997) also studied police effectiveness. They used the ratio of arrests to crime complaints to measure effectiveness. If the ratio was above the norm, the precinct was considered effective. The researchers evaluated efficiency and effectiveness together to determine how well precincts were performing. They found that 25 NYC police precincts were inefficient and ineffective. The findings suggested these precincts required management to improve their outputs and effectiveness (Mourdoukoutas & Mourdoukoutas, 1997).

A study by Mastrobuoni (2020) examined if IT use was effective in reducing crime. The study analyzed predictive policing to see if its use would increase crime clearance rates. Predictive policing is the use of IT to predict the behavior of criminals and deploy police personnel. In 2013, 90% of police agencies used IT to analyze and maintain crime reports

(Mastrobuni, 2020). The researcher studied IT using the Milan, Italy, police department since they were one of the first agencies to use predictive policing in 2008.

Mastrobuoni (2020) analyzed commercial robbery rates in the city of Milan, Italy, from 2008 to 2011. The software used was called KeyCrime, which generates individual predictions of commercial robberies. Robbery rates dropped from 1.4 per hundred thousand inhabitants to .5 per hundred thousand inhabitants (Mastrobuni, 2020). No other similarly sized Italian city had similar crime drops. The researchers' findings suggested that predictive policing and its required IT investments will increase the number of arrests made by the police.

Ioimo and Aronson (2003) studied the use of mobile computers in police cars. In a study in a medium-sized city in Arizona, they wanted to determine if there were measurable benefits achieved from police department officers' use of mobile computers. The officers were assigned to the records, investigations and administration bureaus. They examined data before the deployment of mobile computers and 18 months later they surveyed all members of the agency using Goodhue's (1995) proven TTF questionnaire. They made several modifications to the questionnaire to change the information system to police field computers.

Ioimo and Aronson (2003) found that officers assigned to administration, detectives, and records personnel benefitted from mobile computing technology. Records clerks who previously performed data entry were reassigned to other tasks. The clearance rate for detectives went up after mobile computing was implemented, and administrators felt that they received information faster (Ioimo & Aronson, 2003).

The Ioimo and Aronson (2004) study was similar to their previous research. In that study they surveyed officers using Goodhue's (1995) TTF questionnaire; however, it analyzed

the productivity of field officers. A written survey was mailed to 500 randomly selected officers. They received 100 completed surveys. Ioimo and Aronson (2004) found a decrease in productivity by field officers after mobile computers were installed in police cars. They discovered that arrests by field officers declined, and the time to complete a report went up from 21.3 minutes to 60.3 minutes (Ioimo & Aronson, 2004). The researchers believed that this was caused by the fact that the use of mobile computers was forcing officers to be more thorough in their reports. This helped detectives who were assigned to investigate these cases. The researchers believed that while productivity for field officers decreased, productivity for detectives, records officers, and administrators went up (Ioimo & Aronson, 2004).

Nunn (1994) studied MDTs in police cars, looking to see if their installation in police cars affected stolen motor vehicle recovery rates. Nunn studied Dallas and Fort Worth police who used MDTs and compared them to Austin police who did not use MDTs. The researcher analyzed 10 years of data for Austin and Fort Worth and 8 years for Dallas. The data were compared using an interrupted time-series design.

Nunn (1994) found that MDT use was linked to improved motor vehicle recovery rates. The researchers also noted that the number of stolen motor vehicles went up during the period. Nunn felt that further research was needed on MDT use by urban police departments to examine how these agencies were using their MDTs (Nunn, 1994).

Oh et al. (2019) studied the mediating role of police effectiveness on the relationship between social disorder and the fear of crime. The researchers were attempting to study whether police effectiveness influenced residents' fear of crime. The researchers conducted a random telephone survey of residents in Houston. The residents were asked questions about their fear of their homes being burglarized and being a victim of a home invasion robbery. Oh

et al. (2009) found that the public's perception of disorder was based on actual levels of disorder in the community. If the disorder was close to the residence of survey respondents, their fear of crime at home increased, and these perceptions reduced the respondents' trust in the police. This association applied to all but the most disadvantaged neighborhoods (Oh et al., 2019).

Lum et al. (2014) studied technology's impact on police effectiveness. This mixed-methods case study examined two large police agencies. The researchers focused on information technology and crime analysis and surveyed all sworn members of both agencies. They conducted targeted interviews and focus groups. The officers were selected by the agency based on the researchers' requests for officers of various ranks, assignments, and units. A total of 241 officers and civilian employees participated in the interviews and focus groups from both agencies.

Lum et al. (2014) found that both crime analysis and information technologies were used most when officers responded to 911 calls or stopped subjects on the street. They found that in both agencies, technology was not used to identify crime patterns or trends, or improve response to specific crime problems systematically. The researchers also found that when new technologies were introduced, officers believed they did not help with their primary job, and they resisted using the latest technology (Koper et al., 2014).

Ho and Cho (2017) investigated if the public's perception of police communication effectiveness influenced their satisfaction with the police department and its crime prevention strategies in Kansas City, Missouri. They used crime data from January 2009 until June 2014. A citizen satisfaction survey was conducted from July 2011 to June 2014 using stratified random sampling of city council districts. Two questions from the survey were used as

dependent variables, “How satisfied are you with the quality of local police protection” and “How satisfied are you with the city’s overall efforts to prevent crime?” (Ho & Cho, 2017, p. 230).

Ho and Cho (2017) found the public’s perceived communication effectiveness between the public and the police contributed to their satisfaction with the police and the police department's crime prevention activities. This continued even when crime rates were increasing. The researchers found that if the public felt that they were well informed about where a crime occurred and what the police were doing about that crime, they had a more positive view of the police and its crime prevention strategies. If the public was not well informed about crime and the police department's crime prevention strategies, they would believe it was ineffective (Ho & Cho, 2017).

Torres (2017) studied the police use of trespassing laws in public housing developments to determine if these laws affected residents’ perception of police effectiveness. Trespassing laws are frequently used by police in many cities, such as NYC, as a crime reduction strategy. Police patrol the hallways and stairways, looking for people who do not live in the building, and arrest them when appropriate. He also studied if community policing strategies mitigated these effects. The researcher surveyed residents in six public housing developments in a Southeastern U.S. city.

Torres (2017) found that if the residents felt under-policed, they also felt the police were ineffective. The residents also felt if they were over-policed, that the police were ineffective. The residents wanted to be informed about what the police were doing to prevent crime. The researcher found that community policing helped build trust between the police

and the community, which increased the public's perception of police effectiveness (Torres, 2017)

Studies have shown that technology improves police effectiveness (Agrawal et al., 2003; Danziger & Kraemer, 1985; Ioimo & Aronson, 2004; Mastrobuni, 2020). Mobile computer terminal use in police cars had the equivalence of deploying 6,174 officers (Agrawal et al., 2003). Computers helped detectives solve 37% more cases (Danziger & Kraemer, 1985) and increased detective productivity (Ioimo & Aronson, 2004). Predictive policing was found to increase the number of arrests made by police (Mastrobuni, 2020). Computer use helped the police recover more stolen cars (Nunn, 1994). Officers will only use new technology if they believe that it helps them to perform their primary job (Lum et al., 2014).

Police Use of Technology in the United States

Strom (2017) received a grant from the National Institute of Justice to study what new technologies law enforcement agencies in the United States were using and how these technologies were changing the law enforcement agencies that were using them. An expert panel was created to review various new technologies. A survey was sent to over 1,200 law enforcement agencies across the United States. Lastly, the researchers visited small, medium, and large law enforcement agencies.

Strom (2017) found "that technology is having a positive impact on U.S. law enforcement agencies in terms of increasing efficiency, providing communication, enhancing information-sharing practices, and improving informational and analytical capacities" (Strom, 2017, pp. 2-3). The researcher believed that more evidence-based research was necessary for policing technology. The findings indicated that policymakers and experts in technology need to work together to better integrate new technology in law enforcement agencies. The law

enforcement agency's past experiences with implementing new technology affected how they would use new technology in the future (Strom, 2017).

Zahabi and Kaber (2017) studied the use of mobile computer terminals (MCT) by police officers to see if the design of the MCT affected their driving. The researchers were studying if MCT usage by police officers led to distracted driving. Officers frequently use the MCT while driving. The researchers selected 20 police officers at random from one police agency, used a driving simulator, and filmed the simulation. The officers drove the simulator and were told to perform a license plate check on the MCT while driving. The officers then had to read the results of the plate check out loud while continuing to drive. The MCTs had two different interface designs; one was a new enhanced model that was designed to be easier to use and the other design was an older model.

Zahabi and Kaber (2017) found that officers' driving performance remained consistent; however, officers' visual attention to the roadway was lower, and their workload was considerably higher. The enhanced MCT design reduced task completion time. One limitation of the study was the officers were driving at a constant speed of 40 miles per hour and drove straight. This does not replicate actual street conditions officers were likely to encounter.

Police agencies in the United States are embracing new technologies. Strom (2017) found that 96% of police agencies in the US were implementing new technology. Zahabi and Kaber (2017) found that putting MCTs in police cars did not increase vehicle accidents.

International Police Use of Technology

Abbas and Policek (2020) studied the resistance by police officers in England to the use of a mobile device called the Kelvin. The Kelvin is a mobile device thats use was

mandated by many British police forces. This mixed-methods study used focus groups, Q-cards ranking, and an online survey. They held nine focus groups of officers with 57 officers from a variety of units. Q-cards, index cards with statements printed on them were given to the participants. The participants were asked to rank the statements printed on the Q-cards. One set of Q-cards had statements about the benefits of mobile devices, one set of Q-cards had statements about barriers to using mobile devices. The last set of Q cards had statements about enhancements that would reduce barriers to usage of mobile devices.

Abbas and Policek (2020) found that some officers were still using handwritten reports despite the mandate to use the Kelvin to prepare reports. These officers stated that they did not trust the Kelvin device. The online survey showed that 64% of officers believed that the agency adapted technology that was not useful, and 61% of officers were not satisfied with implementing this technology (Abbas & Policek, 2020). Older officers preferred pen and paper to prepare reports, while younger officers preferred the Kelvin. The survey found that 71% believed that the Kelvin devices did not enhance their job satisfaction (Abbas & Policek, 2020).

Chan (2001) studied the impact of IT on the police in Australia. The researcher interviewed 23 senior police managers and IT specialists, held 11 focus groups with 106 participants, and surveyed a purposeful sample of 506 police officers. The researcher also observed officers in the field and reviewed documents related to the implementation of IT and related policies. Chan (2001) found that information technology had changed policing by improving accountability, communication, and transparency. Chan found that the survey respondents spent an average of 3 hours 37 minutes using computers for administrative work per shift, and 72% of survey respondents felt that IT had made a significant difference to

police work. When the respondents were asked if IT helped the agency in problem-oriented policing, 38% agreed, and 52% were neutral. IT had led to increased accountability, which 60% of survey respondents believed, and 40% felt IT had led to a less trusting environment both internally and externally (Chan, 2001).

Sorensen and Pica (2005) studied mobile technologies by the police in the United Kingdom. The researchers observed police officers in vehicles who responded to calls for service from the public and traffic officers. The study used several methods to collect data that included informal interviews of officers. They also observed officers responding to emergency calls for 250 hours over 7 months and took notes. The study was a qualitative ethnographic study that examined how officers used mobile devices in the field.

Sorensen and Pica (2005) found that the officers used the police radio the most, followed by cell phone and MDT. They identified five police activities that the officers performed daily. They included standing by in-car before the incident, driving to an incident, acting at the incident, driving from the incident, and standing by in-car car after the incident. The researchers found that the officers spent 34% of their time driving to an incident and used the police radio and MDT the most (Sorensen & Pica, 2005).

Technology has a positive impact on law enforcement agencies in the United States and internationally (Chan, 2001; Sorensen & Pica, 2005; Strom, 2017). Abbas and Policek (2005) found resistance to using new technology among experienced officers. This current study examined officers' perceptions of how the NYPD Mobility Initiative has made officers jobs safer, more efficient, and effective.

Task-Technology Fit Theory

The task-technology fit theory was developed by Goodhue in 1988. For technology to improve performance, the user must believe that the technology fits the functions that they are required to perform. Goodhue believed that users of technology could evaluate their own task-technology fit (Goodhue, 1995).

Goodhue (1995) conducted a study to see if higher TTF led to better performance. He also believed that users of technology could evaluate their own TTF. He surveyed 500 users of technology in 10 different companies. They were asked 32 questions which were validated in Goodhue's past research on TTF. The questions related to how the technology they were using fit the tasks that they were required to perform. "The TTF perspective views technology as a means by which a goal-directed individual performs tasks" (Goodhue, 1995, p. 1827).

Goodhue received 357 replies from managers and non-IT staff who used data in their jobs. He found empirical support for users evaluating their TTF. Users viewed technology as a tool that either helped them complete tasks or made the task harder (Goodhue, 1995). Goodhue found that users based their evaluations on the information system they used, the task they were required to perform, and their own individual characteristics.

Howard and Rose (2019) studied the task-technology fit theory to create task-technology fit scales and reclarify the theory. The researchers conducted six separate studies. Howard and Rose validated a TTF scale and a TTF/M (task-technology match) scale. Other researchers can use these scales to assess TTF. Businesses can use TTF to improve their operations. Companies can also use it to create software with a better fit for that organization (Howard & Rose, 2019). TTF can be used by the NYPD to improve the Mobility Initiative.

Parkes (2013) studied how TTF affected user attitudes and performance. This quantitative study used subjects recruited by the Insolvency Practitioners Association of Australia. The subjects had different levels of expertise, and some were students; others had been working for years in the insolvency field. The subjects were randomly assigned a complicated insolvency case or an easy insolvency case on which to work. They had to answer questions without any assistance and then used a software package called InsolveDG. They then answered a series of questions about the usefulness of InsolveDG. The researcher broke TTF into three separate models. The first model was TTF, the existing model, the second model was individual-technology fit (ITeF) and the last model was task-individual fit (TaIF). ITeF is how the technology fits the users' knowledge of the tasks they are required to perform. (TaIF) is how the tasks fit the knowledge of the user. The technology is not examined.

Parkes (2013) found that TTF affects users' attitudes toward the technology. If the technology fits the user's technological abilities, the user's attitude toward the technology improved. They also found that technological performance was better when TTF was good. The researcher found that when TTF was good and technological performance was good, user attitudes toward the technology improved (Parkes, 2013).

Staples and Seddon (2004) studied TTF in two settings, one where technology use was mandatory and one setting where technology use was voluntary. They surveyed the staff of a large university library about their mandated use of the library's central catalog system. They sent out surveys to 250 librarians. The researchers sent out 600 surveys to students about their voluntary use of word processing software and spreadsheet software.

Staples and Seddon (2004) found strong support for TTF in both groups, consistent with Goodhue's (1995) previous studies. The researchers found that as TTF went up, so did performance. TTF also affected attitudes and beliefs about using the technology. Social norms also affected the usage of technology in the group where technology use was mandated.

Chapter Summary

The literature review has examined relevant scholarly articles on police efficiency internationally and in the United States. Data Envelopment Analysis is a proven method used to determine the efficiency of police departments both in the United States and internationally and to compare police departments even if they are located in different cities and have different functions (Asif et al., 2017; Deangelo et al., 2014; Drake & Simper, 2005; Garcia-Sanchez, 2008; Gorman & Ruggiero, 2008).

Technology now carries an essential role in public safety (Insight.com, 2022). A study by Tiesman et al. (2018) found that police officers had a high rate of death and non-fatal injuries. Police departments can use information technology to reduce line of duty injuries to police officers (Pang & Pavlou, 2019).

Studies on police effectiveness were examined. These included studies on the effectiveness of police use of technology. Agrawal et al. (2003) examined the effectiveness of mobile computer terminals used by the police and found that the technology made the police more effective. Iomino and Aronson (2003), found that mobile computers in police cars helped administrators, detectives, and records personnel. Danziger and Kraemer (1985) examined the impact of the use of computer systems by detectives and found that detectives cleared more cases as a result of computer use. Koper et al. (2015) examined the use of mobile technology by police to reduce crime and found that the officers used mobile

technology to check for stolen cars and conduct warrant checks on persons they had stopped to conduct field interviews; however, there was no direct impact on crime. Mastrobuoni (2020) examined information technology usage by the police and found that its use increased the number of arrests made by police.

Police agencies in the United States and internationally are embracing new technologies. Strom (2017) found that 96% of police agencies in the US were implementing new technology. Abbas and Policek (2020) studied the use and implementation of a mobile device called the Kelvin in the United Kingdom. Strom found there was resistance among older officers to adopting the new technology.

Studies that examine police officer safety were analyzed. Tiesman et al. (2018) found that police officers were treated at emergency rooms for the line of duty injuries at a rate 3 times higher than other United States workers. A study done by Pang and Pavlou (2019) found that information technology use can reduce the number of officers killed or assaulted by 42-50%.

Goodhue (1995) developed the task-technology fit theory. Goodhue believed that in order for technology to improve performance, the user must believe that the technology they are using fits the job functions they are required to perform. In this chapter, the researcher examined Goodhue's original studies and several newer studies. In 2004 Staples and Seddon examined TTF where the use of new technology was mandatory and where the use of new technology was voluntary, and found that when TTF went up, so did performance. Parkes (2013) found that TTF affects users' attitudes toward the technology and that technological performance improved when TTF went up. Howard and Rose (2014) studied TTF and found that companies can use TTF to create software that is a better fit for employees. This study

extended the research of previous literature on policework and TTF by examining the link between the NYPD's Mobility Initiative and its impact on TTF related to officer perceptions of policing.

Chapter 3: Research Design Methodology

General Perspective

The NYPD Mobility Initiative was launched in 2014. The NYPD Mobility Initiative involved the purchase of 41,000 mobile devices. A smartphone was issued to every NYPD officer, and every NYPD patrol car had a tablet computer installed. The program had a startup cost of $160,000,000. The purpose of the NYPD Mobility Initiative was to make police officers and the public safer and improve the effectiveness and efficiency of the NYPD (Vance, 2014).

The NYPD Mobility Initiative was designed to make the NYPD more efficient and effective by giving police officers access to all NYPD databases in the field. Previously, the officers had to go to a police precinct to access these databases or ask the radio dispatcher to access these databases, thus wasting time. Officers have been given the ability to quickly contact other nearby officers to provide alerts about wanted persons or any other threats (NYPD, 2014).

The smartphones and tablets allowed officers to prepare reports electronically that were previously prepared by hand. These include aided cards, which are reports of sick or injured persons, and accident reports, which are required in some vehicle accident cases. Other police reports are being added over time. Detectives were given the ability to access their cases from the field, which allowed them to update their investigations immediately (NYPD, 2014).

The smartphones and tablets have specially designed applications designed to streamline many NYPD processes. Many of these NYPD processes had not changed since the 1940s. Officers were required to maintain a memo book. This was a handwritten account of their daily activities. Information about arrests and any statements made by defendants or crime victims are handwritten in the memo book. The memo book application placed the information into an NYPD database which made the data an investigative tool that detectives could use (Kilgannen, 2020).

The NYPD Mobility Initiative was designed to make it safer for the public and police officers by giving officers real-time data on 911 calls as they responded to a location. Officers have access to information such as previous 911 calls to a location or if anyone has a licensed firearm at the place as well as the 911 call takers' notes as they were entered into the 911 system. Information about past police activity was also given (Vance, 2014).

The purpose of this quantitative descriptive retrospective pretest-posttest research study was to examine to what degree NYPD sergeants perceived that the NYPD Mobility Initiative made the job of police officers safer, more effective, and efficient. For the NYPD Mobility Initiative to be successful, officers must use their smartphones and tablets to achieve the program's goals.

Research Design

This quantitative descriptive research study used a retrospective pretest-posttest (RPP) design. RPP allows researchers to collect pretest and current data simultaneously. Participants are asked about their existing beliefs, attitudes, and opinions and are simultaneously asked about the same beliefs, attitudes, and opinions prior to the study treatment. Data from participants are only collected once (Little et al., 2020).

RPP was recommended by Howard and Dailey (1979) as a way to reduce response shift bias. Response shift bias occurs when participants in studies use a different standard to rate themselves between self-report measures (Klatt & Taylor-Powell, 2005). Howard and Dailey (1979) found that RPP had greater validity than previous studies that used traditional pretests and posttests. Howard and Dailey conducted a total of five studies to reach this conclusion. In one study, the researchers evaluated an U.S. Air Force training program designed to reduce dogmatism using a pretest-posttest design. The researchers found that the participants reported an increase in dogmatism after attending the training. The researchers interviewed the participants and found that the participants had changed their beliefs on their initial levels of dogmatism after they attended the training. In this current study RPP avoided response shift error by asking their perceptions about the NYPD Mobility Initiative after participants have been using the smartphones and tablets that the initiative provided. The participants were familiar with and were using the devices.

Since the Howard and Dailey study there have been several other studies on RPP. Moberg and Finch (2007) studied the outcome of a substance abuse program. The researchers found a reduction in substance abuse by high school students after they completed the substance abuse program. Drennan and Hyde (2008) studied the impact of an educational program using RPP and traditional pretest-posttest design. The researchers concluded that RPP did not have response shift bias and was a useful method to evaluate a programs outcome. Little et al. (2020) studied RPP by examining several studies that used RPP. The researchers found that "the design has great promise to identify program effects that can inform practice and shape policy" (Little et al., 2020, p. 182).

One strength of RPP is that participants are only asked their opinions once. Some participants dislike being asked the same questions twice (Lamb, 2005). RPP can detect changes or a lack of changes after an intervention, (Little et al., 2020). The researcher evaluated the NYPD Mobility Initiative, which started in 2014, so traditional pretests were not possible.

Response burden was an issue in this study. Eighty-one respondents started the survey; by Question 11, the number of respondents who responded to this question dropped to 59, which was 73% of respondents. Question 30, the last question, had 49 respondents, which is 60% of respondents. There are four components to response burden, which include the length of the survey, the effort required, stress as perceived by respondent, and the frequency of surveys (Bradburn, 1978). The 28 questions were too many for several of the respondents, who stopped answering questions or skipped questions. Although robust procedures of pairwise and listwise deletion were used for the analyses as appropriate, there is always a concern for missing or incomplete data pairs producing Type I errors. Due to the low *p*-values of most of the response pairs, Type I errors were highly unlikely in this study.

Without knowledge of the effect size, that is, the difference in the average Likert scale of the after portion of the particular survey question from the average of the before portion, of the particular survey question, and an extremely conservative *t* test score of 2 was assumed. With an accepted *p*-value of 0.05 as is accepted in social sciences, around the predicted mean of 3.0 derived from the Likert scale range from 1-5, a sample size of 55 would be needed. A *t* score value of 2 under the previous assumption would equate to an effect size of approximately 0.5 for the model to be significant. If the sample size is under 55, a larger

effect size would be needed to have significance below .05. Aiming for a sample size of 75 was adequate for these conservative estimates.

Research Context

The New York City Police Department was established in 1845. It had 35,030 uniform police officers and 15,021 civilian employees in the fiscal year 2023 budget, making it the largest police department in the United States (Citizens Budget Commission, 2022).

The NYPD is responsible for providing police services for the approximately 8.1 million people who live in NYC's five boroughs (U.S. Census Bureau, 2022). New York City's size is 302 square miles (U.S. Census Bureau, 2022). The agency is also responsible for traffic management, security in the NYC public schools, and counterterrorism. They also patrol the NYC subways and public housing developments.

Research Participants

The quantitative descriptive retrospective pretest-posttest research study's population was sergeants in the NYPD with 10-14 years of service. The NYPD's demographic database shows that there were 4,403 sergeants, with 1,242 sergeants having between 10-14 years of service as of July 11, 2022. Since this study was a retrospective pretest-posttest, it was important to have participants who were members of the NYPD prior to the NYPD Mobility Initiative launch in 2014. Sergeants in the NYPD were front-line supervisors. They must be police officers for a minimum of 5 years before being promoted to sergeant. Sergeants hold a crucial position in police organizations such as the NYPD (Iannone, 1987). They hold significant influence over the police officers who work under them. Sergeants are responsible for ensuring that policies and procedures are correctly followed. They must have a good working knowledge of the NYPD Mobility Initiative to help their subordinates when they

have problems with the technology. Sergeants are leaders who influence officers who work for them (Iannone, 1987). Sergeants with 10-14 years of service have experience both as police officers and as sergeants and were members of the NYPD prior to the launch of the NYPD Mobility Initiative for 3 to 7 years. They understand NYPD procedures prior to the Mobility Initiative and after the program's launch in 2014. The Sergeants Benevolent Association (SBA), which is the union that all NYPD sergeants are required to join, agreed to send out e-mails to all sergeants with 10-14 years of experience with the NYPD, requesting they participate in this study.

Instruments Used in Data Collection

This quantitative descriptive retrospective pretest-posttest research study used an online survey given to 1,242 sergeants in the NYPD who have 10-14 years of experience. "A survey design provides a quantitative description of trends, attitudes, and opinions of a population, or tests for associations among variables of a population" (Creswell & Creswell, 2018, p. 147). This quantitative data were used to examine the participant's perceptions of the NYPD Mobility Initiative, which was analyzed. The online survey used a 5-point Likert scale. A score of 5 means *excellent*, and a score of 1 means *poor*. The survey consisted of 28 questions directly related to the subjects' use of NYPD issued smartphones and tablets. The online survey was the most appropriate design to ask the respondents their opinions about the NYPD Mobility Imitative and its effects on police officers' safety, effectiveness, and efficiency. The questions asked their opinions prior to the start of the NYPD Mobility Imitative and after its implementation.

"Validity requires, first, that the questions measure the dimension or construct of interest; and second, that respondents interpret the question as intended" (Czaja & Blair, 2014,

p. 103). Piloting was used to ensure the validity of the questions. The survey was piloted by three experienced NYPD supervisors who were knowledgeable about NYPD policies before and after the start of the NYPD Mobility Initiative. They were asked about their opinions of the questions themselves, the order they were asked, the appropriateness of the scales used in the responses, and if any questions were repetitive. The NYPD supervisors piloting the survey were asked if any questions should be removed from the survey and if any improvements were necessary (Bowden et al., 2002). The supervisors piloting the survey felt the questions were appropriate and worded conveniently for the reader.

An online survey with 28 questions and one demographic question was administered to the participants. The online survey was sent by Qualtrics to the participant's e-mail accounts. The participants were asked about their years of service in the NYPD to confirm their eligibility to take the survey. The remaining questions asked the participants to rate their abilities to perform selected tasks before and after the start of the NYPD Mobility Imitative. The sergeants' survey is provided in Appendix A. The questions were directly related to the three research questions in this study as shown in Appendix B. The survey took the participants approximately 15-20 minutes to complete.

The link to the survey used in this study was e-mailed to 1,249 sergeants who had 10-14 years of service with the NYPD by the Sergeants Benevolent Association (SBA). The SBA is the union NYPD sergeants are required to join. The SBA also sent two reminder e-mails. The respondents were directed by the link to Qualtrics. There was a total of 81 participants who responded to the e-mail from the SBA and met all the eligibility criteria and consented to take the survey.

Informed consent was obtained electronically by the researcher for all participants. The participants received a Statement of Informed Consent for Adult Participants, at the beginning of the survey, which gave a summary of key information about this research study. The information included the purpose of the study, study procedures, risks and benefits of the study, and confidentiality/privacy procedures. If the participants consented to the survey, they were given the survey questions. If they did not consent, the survey ended. The survey data will be kept electronically in a confidential file accessible only to the researcher. The researcher will ensure that the participants' personal information from the survey remained confidential, as well as any other police department identifiers. The records will be destroyed after 3 years.

Procedures Used for Data Analysis and Collection

The quantitative data from the respondent's online survey was captured by Qualtrics and then transferred to a statistical software platform. IBM Statistical Package for Social Sciences (SPSS) version 25 provided by St. John Fisher University was used to interpret the data. A paired *t* test was conducted on the data received from the surveys. A paired *t* test compares the means of two measures covering two different periods (Huck, 2012). This quantitative descriptive retrospective pretest-posttest research study evaluated the participants' perceptions of the degree that the NYPD Mobility Initiative has made police officers' jobs safer, more effective, and efficient. The paired *t* test was conducted to compare the participant's perceptions before and after the implementation of the NYPD Mobility Initiative. The objective of the paired *t* test was to prove that there was a difference in the participant's perceptions of their safety, effectiveness, and efficiency since the start of the NYPD Mobility

Initiative. All data will be kept in a password-protected computer in a password-protected file. There will be two different passwords.

Summary

The NYPD Mobility Initiative was launched in 2014 and is still in operation today. The program was designed to make police officers' jobs safer, more effective, and efficient (NYPD, 2014). “Policing has always been an information business, and the management of information has always been essential to success” (NYPD, 2014, p. 9). Getting officers' information will improve safety and make the NYPD more efficient and effective. This quantitative descriptive retrospective pretest-posttest research study examined the extent to which NYPD sergeants perceived that the NYPD Mobility Initiative has met its goals. For the NYPD Mobility Initiative to be successful, officers must use their smartphones and tablets. If the sergeants surveyed believed that the smartphones and tablets and applications supported by the NYPD Mobility Initiative fit the tasks they are required to perform daily, TTF will go up. Research indicates that this should reflect improved officer performance (Goodhue & Thompson, 1995; Parkes, 2013). The study administered an online survey to NYPD sergeants to examine their perceptions of the program. The data can be used by NYPD administrators, legislators, and other criminal justice professionals who are interested in investing in new technologies for police departments and identifying the impact of those technologies.

Chapter 4: Results

Introduction

The NYPD Mobility Initiative was announced by Mayor Bill De Blasio, New York District Attorney Cyrus Vance, and Police Commissioner William Bratton on October 23, 2014. This $160 million program involved the purchase of 35,000 smartphones and 6,000 tablet computers. Every NYPD officer would be issued a smartphone and every New York City police car would have a tablet computer installed (NYC.gov., 2014). Mayor Bill De Blasio stated that the purpose of the NYPD Mobility Initiative was to improve the effectiveness and efficiency of the NYPD and to make police officers and the public safer (New York City, 2014). The Initiative also changed many NYPD processes that had not changed since the 1940s.

The purpose of this quantitative descriptive retrospective pretest-posttest research study was to examine the extent that NYPD sergeants perceive that the NYPD Mobility Initiative has made the job of police officers safer, more effective, and more efficient. The study used an online survey sent to NYPD sergeants to examine their perceptions of the program. The survey questions were piloted by experienced NYPD supervisors who were knowledgeable about NYPD procedures before and after the start of the NYPD Mobility Initiative. The experienced supervisors felt the questions were appropriate for the survey. The questionnaire was taken by 81 sergeants who agreed to the informed consent and had 10-14 years of experience in the NYPD.

Research Questions

This research study was guided by the following research questions:

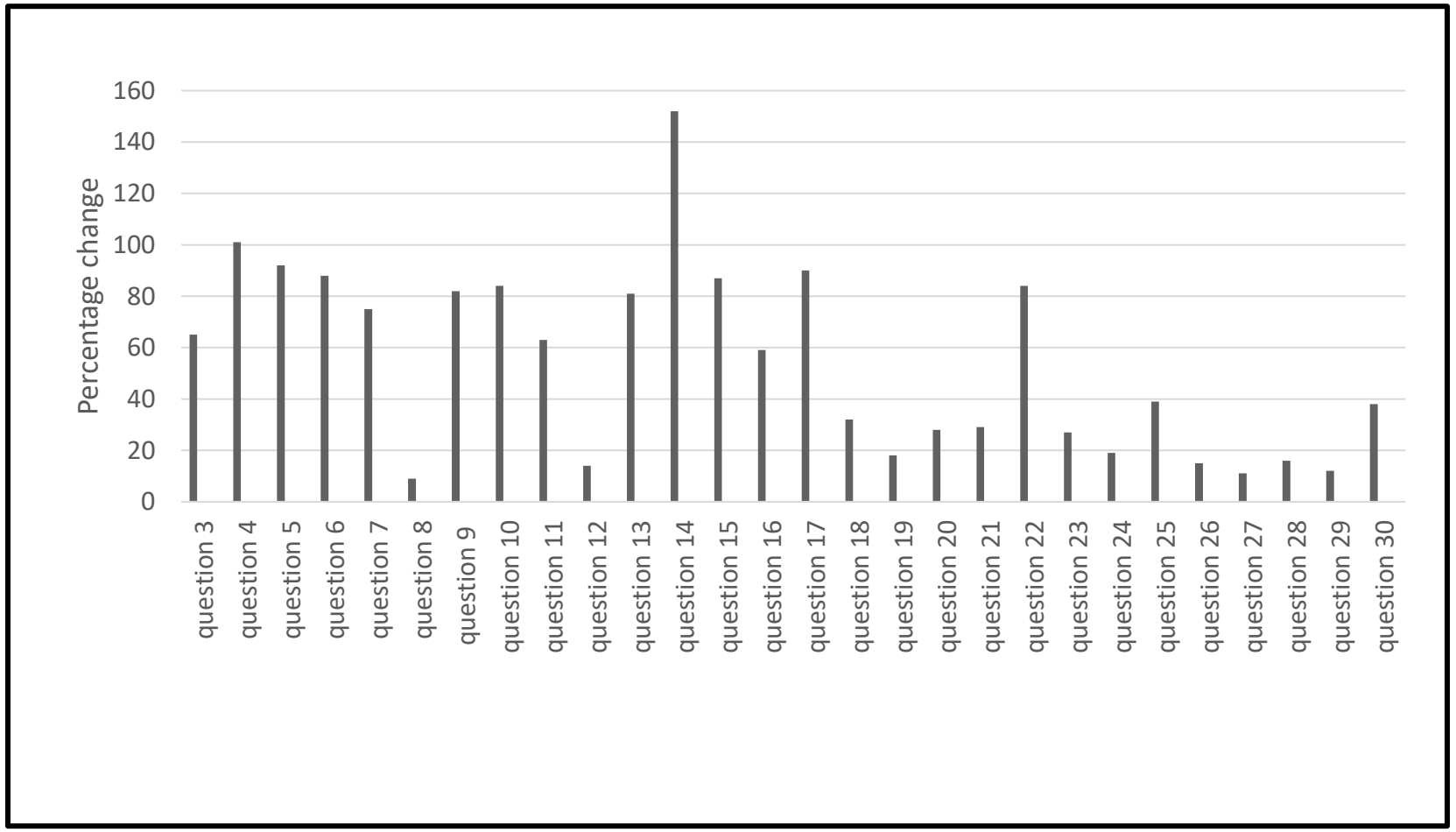
1. To what extent did the NYPD Mobility Initiative change officers' perceived ability to perform tasks that make them safer?
2. To what extent did the NYPD Mobility Initiative change officers' perceived ability to perform tasks that make them more effective?
3. To what extent did the NYPD Mobility Initiative change officers' perceived ability to perform tasks that make them more efficient?

Data Analysis and Findings

The purpose of the pared *t* test was to test to see if there is a difference in the participant's perceptions of their safety, effectiveness, and efficiency since the start of the NYPD Mobility Initiative. The 28 survey questions were analyzed in this manner. The figure below shows the increase in perceived ability to perform tasks from the 28 survey questions. Figure 4.1 outlines the increase in perceived ability to perform tasks.

Figure 4.1

Increase in Perceived Ability to Perform Tasks



Questions Related to Research Question 1

Research Question 1 asked to what extent did the NYPD Mobility Initiative change officers' perceived ability to perform tasks that make them safer. There were 10 survey questions related to Research Question 1. Table 4.1 shows the related questions.

Table 4.1

Survey Questions Related to Research Question 1

Question
3. How would you rate your ability to conduct a warrant check on a suspect BEFORE the start of The NYPD Mobility Initiative? How would you rate your ability to conduct a warrant check on a suspect AFTER the start of the NYPD Mobility Initiative?
4. How would you rate your ability to check for prior domestic incident reports BEFORE the start of the NYPD Mobility Initiative? How would you rate your ability to check for prior domestic incident reports AFTER the start of the NYPD Mobility Initiative?
5. How would you rate your ability to contact a complainant BEFORE the start of the NYPD Mobility Initiative? How would you rate your ability to contact a complainant AFTER the start of the NYPD Mobility Initiative?
6. How would you rate your ability for complainants to contact you BEFORE the start of the NYPD Mobility Initiative? How would you rate your ability for complainants to contact you AFTER the start of the NYPD Mobility Initiative?
7. How would you rate your ability to check the validity of a driver's license BEFORE the start of the NYPD Mobility Initiative? How would you rate your ability to check the validity of a driver's license AFTER the start of the NYPD Mobility Initiative?
9. How would you rate your ability to check for active arrest warrants BEFORE the start of the NYPD Mobility Initiative? How would you rate your ability to check for active arrest warrants AFTER the start of the NYPD Mobility Initiative?
10. How would you rate your ability to determine if a car is stolen BEFORE the start of the NYPD Mobility Initiative? How would you rate your ability to determine if a car is stolen AFTER the start of the NYPD Mobility Initiative?
12. How would you rate your ability to interact with radio dispatcher BEFORE the start of the NYPD Mobility Initiative? How would you rate your ability to interact with radio dispatcher AFTER the start of the NYPD Mobility Initiative?
13. How would you rate your ability to access NYPD databases as needed BEFORE the start of the NYPD Mobility Initiative? How would you rate your ability to access NYPD databases as needed AFTER the start of the NYPD Mobility Initiative?
14. How would you rate your ability to determine the history of 911 calls at location BEFORE the start of the NYPD Mobility Initiative? How would you rate your ability to determine the history of 911 calls at location AFTER the start of the NYPD Mobility Initiative?

The 10 survey questions related to Research Question 1 are analyzed below, providing the number of respondents for each survey question and their responses using a 1-5 Likert scale. The *t* test result is also given with an analysis. In Questions 4, 5, 6, 9, 13 and 14, some survey respondents did not answer both the before and after part of a question. Pairwise deletion of cases was utilized for these questions. In other words, the participant's response to that question was not included in that question's *t* test.

Survey Question 3 Results. Table 4.2 shows the response to survey Question 3, which asked participants to rate their ability to conduct a warrant check on a suspect before and after the start of the NYPD Mobility Initiative. Eighty-one participants answered survey Question 3.

Table 4.2

Ability to Conduct a Warrant Check on a Subject

	Poor	Fair	Good	Very good	Excellent	Total Respondents
Before	19(23%)	30(37%)	20(25%)	9(11%)	3(4%)	81
After	0(0%)	8(10%)	21(26%)	27(33%)	25(31%)	81

The *t* test showed that the participants' perceived ability to conduct a warrant check on a subject before the implementation of the NYPD Mobility Initiative was M=2.33, SD=1.072. In comparison, their perceived ability to conduct a warrant check on a subject after the implementation of the NYPD Mobility Initiative was M=3.84, SD=0.0968, t (80)=8.322, p<.001. The *t* test showed an increase in the means (M) from 2.33 to 3.84. The participants indicated that there was a 65% improvement in their perceived ability to conduct this task since the start of the NYPD Mobility Initiative.

Survey Question 4 Results. Table 4.3 shows the response to survey Question 4, which asked respondents to rate their ability to check for prior domestic incident reports before and after the start of the NYPD Mobility Initiative. Seventy-four respondents answered the before and after part of survey Question 4 and the responses were used in the *t* test. One respondent only answered the after portion of the survey Question 4, therefore this response was not included in the *t* test.

Table 4.3

Ability to Check for Prior Domestic Incident Reports

	Poor	Fair	Good	Very good	Excellent	Total respondents	Valid responses
Before	40(54%)	17(22%)	11(15%)	5(7%)	1(1%)	74	74
After	2(3%)	9(12%)	24(32%)	28(37%)	12(16%)	75	74

The *t* test showed that the participants' perceived ability to check for prior domestic incident reports before the implementation of the NYPD Mobility Initiative was (M=1.76, SD=1.018). In comparison, their perceived ability to check for prior domestic incident reports after the implementation of the NYPD Mobility Initiative was M=3.54 SD=0.0996, $t(73)$=10.283, p<.001. The *t* test showed an increase in the means from 1.76 to 3.54. The participants indicated that there was a 101% improvement in their perceived ability to conduct this task after the start of the NYPD Mobility Initiative.

Survey Question 5 Results. Table 4.4 shows the response to survey question 5, which asked respondents to rate their ability to contact a complainant before and after the start of the NYPD Mobility Initiative. Sixty-nine respondents answered the before and after part of survey

question 5, and their responses were used in the *t* test. One respondent only answered the before part of survey question 5, and therefore the response was not used in the *t* test.

Table 4.4

Ability to Contact Complainants

	Poor	Fair	Good	Very good	Excellent	Total respondents	Valid responses
Before	31(44%)	20(29%)	16(23%)	3(4%)	0(0%)	70	69
After	1(1%)	9(13%)	23(33%)	23(33%)	13(19%)	69	69

The *t* test showed that the participants' perceived ability to contact a complainant before the implementation of the NYPD Mobility Initiative was M=1.86, SD=0.912. In comparison, their perceived ability to contact a complainant after the implementation of the NYPD Mobility Initiative was M =3.57, SD=1.007, $t(68)$=8.863, p<.001. The *t* test showed an increase in the means from 1.86 to 3.57. The participants indicated that there was a 92% improvement in their perceived ability to conduct this task after the start of the NYPD Mobility Initiative.

Survey Question 6 Results. Table 4.5 shows the response to survey question 6, which asked respondents to rate the ability for complainants to contact them before and after the start of the NYPD Mobility Initiative. Sixty-four respondents answered the before and after part of survey question 4, and the responses were used in the *t* test. One respondent only answered the after part of survey question 6, therefore the response was not used in the *t* test.

Table 4.5

Ability for Complainants to Contact You

	Poor	Fair	Good	Very good	Excellent	Total respondents	Valid responses
Before	41(66%)	9(14%)	10(16%)	2(3%)	1(2%)	64	64
After	8(12%)	14(22%)	19(29%)	16(25%)	8(12%)	65	64

The *t* test showed that the participants' perceived ability for complainants to contact you before the implementation of the NYPD Mobility Initiative was M=1.63, SD=0.968. In comparison, their perceived ability for complainants to contact you after the implementation of the NYPD Mobility Initiative was M=3.06, SD=1.194, $t(63)$=10.283, p<.001. The *t* test showed an increase in the means from 1.63 to 3.06. The participants indicated that there was an 88% improvement in their perceived ability to conduct this task after the start of the NYPD Mobility Initiative.

Survey Question 7 Results. Table 4.6 shows the response to survey question 7, which asked respondents to rate their ability to check the validity of a driver's license before and after the start of the NYPD Mobility Initiative. Sixty-three respondents answered survey question 7.

Table 4.6

Ability to Check the Validity of a Driver's License

	Poor	Fair	Good	Very good	Excellent	Total respondents
Before	14(22%)	25(40%)	17(27%)	6(10%)	1(2%)	63
After	0(0%)	3(5%)	12(19%)	28(44%)	20(32%)	63

The *t* test showed that the participants' perceived ability to check the validity of a driver's license before the implementation of the NYPD Mobility Initiative was *M*=2.32, S*D*= .997. In comparison, their perceived ability to check the validity of a driver's license after the implementation of the NYPD Mobility Initiative was *M*=4.05, *SD*=0.851, *t*(62)=11.012, *p*<.001. The *t* test showed an increase in the means from 2.32 to 4.05. The participants indicated that there was a 75% improvement in their perceived ability to conduct this task after the start of the NYPD Mobility Initiative.

Survey Question 9 Results. Table 4.7 shows the response to survey question 9, which asked respondents to rate their ability to check for active arrest warrants before and after the start of the NYPD Mobility Initiative. Sixty-one respondents answered the before and after part of survey question 9, and the responses were used in the *t* test. One respondent only answered the before portion of survey question 9, therefore this response was not used in the *t* test.

Table 4.7

Ability to Check for Active Arrest Warrants

	Poor	Fair	Good	Very good	Excellent	Total respondents	Valid responses
Before	19(30%)	23(37%)	14(23%)	4(6%)	2(3%)	62	61
After	0(0%)	4(7%)	12(20%)	28(24%)	17(28%)	61	61

The *t* test showed that the participants' perceived ability to check for active arrest warrants on a subject before the implementation of the NYPD Mobility Initiative was *M*=2.16, *SD*=1.036. In comparison, their perceived ability to check for active arrest warrants after the implementation of the NYPD Mobility Initiative was *M*=3.93, *SD*=0.873, *t*(60)=10.365, *p*<.001.

The *t* test showed an increase in the means from 2.16 to 3.93. The participants indicated that there was an 82% improvement in their perceived ability to conduct this task after the start of the NYPD Mobility Initiative.

Survey Question 10 Results. Table 4.8 shows the response to survey question 10, which asked respondents to rate their ability to determine if a car is stolen before and after the start of the NYPD Mobility Initiative. Sixty-one respondents answered survey question 10.

Table 4.8

Ability to Determine if a Car is Stolen

	Poor	Fair	Good	Very good	Excellent	Total respondents
Before	23(38%)	16(27%)	16(27%)	5(8%)	1(2%)	61
After	0(0%)	3(5%)	16(27%)	28(46%)	14(23%)	61

The *t* test showed that the participants' perceived ability to determine if a car is stolen before the implementation of the NYPD Mobility Initiative was M=2.11, SD=1.050. In comparison, their perceived ability to determine if a car is stolen after the implementation of the NYPD Mobility Initiative was M=3.89, SD=0.839, $t(60)$=9.746, p<.001. The *t* test showed an increase in the means from 2.11 to 3.89. The participants indicated that there was an 84% improvement in their perceived ability to conduct this task after the start of the NYPD Mobility Initiative.

Survey Question 12 Results. Table 4.9 shows the response to survey question 12, which asked respondents to rate their ability to interact with radio dispatcher before and after the start of the NYPD Mobility Initiative. Fifty-nine respondents answered survey question 12.

Table 4.9

Ability to Interact with Radio Dispatcher

	Poor	Fair	Good	Very good	Excellent	Total respondents
Before	9(15%)	10(17%)	25(42%)	12(17%)	3(5%)	59
After	3(5%)	7(12%)	29(49%)	15(25%)	5(8%)	59

The *t* test showed that the participants' perceived ability to interact with radio dispatcher before the implementation of the NYPD Mobility Initiative was M=2.81, SD=1.090. In comparison, their perceived ability to interact with radio dispatcher after the implementation of the NYPD Mobility Initiative was M =3.20, SD=0.943, $t(58)$=2.488, p=.016. The *t* test showed an increase in the means from 2.81 to 3.20. The participants indicated that there was a 14% improvement in their perceived ability to conduct this task after the start of the NYPD Mobility Initiative.

Survey Question 13 Results. Table 4.10 shows the response to survey question 13, which asked respondents to rate their ability to access NYPD databases as needed before and after the start of the NYPD Mobility Initiative. Fifty-seven respondents answered the before and after part of survey question 13 and were included in the *t* test. One respondent only answered the before part of survey question 13, and therefore the response was not included in the *t* test.

Table 4.10

Ability to Access NYPD Databases as Needed

	Poor	Fair	Good	Very good	Excellent	Total respondents	Valid responses
Before	20(34%)	24(41%)	9(16%)	3(5%)	2(3%)	58	57
After	0(0%)	6(11%)	19(33%)	24(42%)	8(14%)	57	57

The *t* test showed that the participants' perceived ability to access NYPD databases as needed before the implementation of the NYPD Mobility Initiative was *M*=2.0, *SD*=1.035. In comparison, their perceived ability to access NYPD databases as needed after the implementation of the NYPD Mobility Initiative was *M* =3.61, *SD*=0.881, *t*(56)=8.74, *p*<.001.

The *t* test showed an increase in the means from 2.0 to 3.61. The participants indicated that there was an 81% improvement in their perceived ability to conduct this task after the start of the NYPD Mobility Initiative.

Survey Question 14 Results. Table 4.11 shows the response to survey question 14, which asked respondents to rate their ability to determine the history of 911 calls at a location before and after the start of the NYPD Mobility Initiative. Fifty-eight respondents answered the before and after part of survey question 14 and are included in the *t* test. One respondent only answered the after portion of survey question 14. This response was not included in the *t* test.

Table 4.11

Ability to Determine the History of 911 Calls at Location

	Poor	Fair	Good	Very Good	Excellent	Total Respondents	Valid responses
Before	42(72%)	5(9%)	7(12%)	2(3%)	2(3%)	58	58
After	0(0%)	3(5%)	12(20%)	28(47%)	16(27%)	59	58

The *t* test showed that the participants' perceived ability to determine the history of 911 calls at a location before the implementation of the NYPD Mobility Initiative was *M*=1.59, *SD*=1.050. In comparison, their perceived ability to determine the history of 911calls at a location after the implementation of the NYPD Mobility Initiative was *M* =4.0, *SD*=0.795, *t*(57)=13.874, *p*<.001. The *t* test showed an increase in the means from 1.59 to 4.0. The

participants indicated that there was a 152% improvement in their perceived ability to conduct this task after the start of the NYPD Mobility Initiative.

Questions Related to Research Question 2

Research Question 2 asked to what extent did the NYPD Mobility Initiative change officers' perceived ability to perform tasks that make them more effective. There were eight questions in the survey that related to this research question. Table 4.12 shows the survey questions related to Research Question 2.

Table 4.12

Questions Related to Research Question 2

Questions
23. How would you rate your ability to direct subordinates BEFORE the start of the NYPD Mobility Initiative? How would you rate your ability to direct subordinates AFTER the start of the NYPD Mobility Initiative?
24. How would you rate your ability to provide guidance to subordinates BEFORE the start of the NYPD Mobility Initiative? How would you rate your ability to provide guidance to subordinates AFTER the start of the NYPD Mobility Initiative?
25. How would you rate your ability to provide coaching to subordinates BEFORE the start of the NYPD Mobility Initiative? How would you rate your ability to provide coaching to subordinates AFTER the start of the NYPD Mobility Initiative?
26. How would you rate your ability to facilitate subordinates BEFORE the start of the NYPD Mobility Initiative? How would you rate your ability to facilitate subordinates AFTER the start of the NYPD Mobility Initiative?
27. How would you rate your ability to mentor subordinates BEFORE the start of the NYPD Mobility Initiative? How would you rate your ability to mentor subordinates AFTER the start of the NYPD Mobility Initiative?
28. How would you rate your ability to train subordinates BEFORE the start of the NYPD Mobility Initiative? How would you rate your ability to train subordinates AFTER the start of the NYPD Mobility Initiative?
29. How would you rate your ability to advocate for subordinates BEFORE the start of the NYPD Mobility Initiative? How would you rate your ability to advocate for subordinates AFTER the start of the NYPD Mobility Initiative?
30. How would you rate your ability to get technical support from the NYPD for issued smartphones/tablets BEFORE the start of the NYPD Mobility Initiative? How would you rate your ability to get technical support from the NYPD for issued ss/tablets AFTER the start of the NYPD Mobility Initiative?

The eight survey questions related to Research Question 2 were analyzed, providing the number of respondents for each survey question and their responses using a 1-5 Likert scale. The *t* test result is also given with an analysis. In Questions 24, 25, 27,28 and 29, some survey respondents did not answer both the before and after part of a question. Pairwise deletion of cases was utilized for these questions. In other words, the participants responses to that question was not included in those questions' *t* tests. In question 23 and 26 one respondent only answered the before portion and a different respondent only answered the after portion. The two responses were not included in that survey question's *t* test.

Survey Question 23 Results. Table 4.13 shows the response to survey question 23, which asked respondents to rate their ability to direct subordinates before and after the start of the NYPD Mobility Initiative. Fifty-one respondents answered both the before and after portions of survey question 23 and were included in the *t* test. One respondent only answered the before portion and a different respondent only answered the after portion, therefore these responses were not included in the *t* test.

Table 4.13

Ability to Direct Subordinates

	Poor	Fair	Good	Very good	excellent	Total respondents	Valid responses
Before	10(19%)	12(23%)	24(46%)	4(8%)	2(4%)	52	51
After	2(4%)	3(6%)	32(62%)	11(21%)	4(8%)	52	51

The *t* test showed that the participants' perceived ability to direct subordinates before the implementation of the NYPD Mobility Initiative was M=2.55, SD=1.026. In comparison, their perceived ability to direct subordinates after the implementation of the NYPD Mobility Initiative

was *M*=3.24, *SD*=0.839, *t*(50)=3.950, *p*<.001. The *t* test showed an increase in the means from 2.55 to 3.24. The participants indicated that there was a 27% improvement in their perceived ability to conduct this task after the start of the NYPD Mobility Initiative.

Survey Question 24 Results. Table 4.14 shows the response to survey question 24, which asked respondents to rate their ability to provide guidance to subordinates before and after the start of the NYPD Mobility Initiative. Fifty-two respondents answered the before and after part of survey question 21 and were included in the *t* test. One respondent only answered the after portion of survey question 24, therefore this response was not included in the *t* test.

Table 4.14

Ability to Provide Guidance to Subordinates

	Poor	Fair	Good	Very Good	Excellent	Total Respondents	Valid responses
Before	8(15%)	13(25%)	23(12%)	6(12%)	2(4%)	52	52
After	2(4%)	5(9%)	30(57%)	13(25%)	3(4%)	53	52

The *t* test showed that the participants' perceived ability to provide guidance to subordinates before the implementation of the NYPD Mobility Initiative was *M*=2.67, *SD*= 1.024. In comparison, their perceived ability to provide guidance to subordinates after the implementation of the NYPD Mobility Initiative was *M* =3.17, *SD*=0.834, *t*(51)=3.411, *p*=.001. The *t* test showed an increase in the mean from 2.67 to 3.17. The participants indicated that there was a 19% improvement in their perceived ability to conduct this task after the start of the NYPD Mobility Initiative.

Survey Question 25 Results. Table 4.15 shows the response to survey question 25, which asked respondents to rate their ability to provide coaching to subordinates before and after the

start of the NYPD Mobility Initiative. Fifty-one respondents answered the before and after part of survey question 21, and the responses are included in the *t* test. Two respondents only answered the after portion of survey question 21, therefore the responses were not included in the *t* test.

Table 4.15

Ability to Provide Coaching to Subordinates

	Poor	Fair	Good	Very good	Excellent	Total respondents	Valid responses
Before	8(16%)	8(16%)	29(57%)	4(8%)	2(4%)	51	51
After	3(6%)	6(11%)	30(57%)	10(19%)	4(8%)	53	51

The *t* test showed that the participants' perceived ability to provide coaching to subordinates before the implementation of the NYPD Mobility Initiative was M=2.26, SD=0.969. In comparison, their perceived ability to provide coaching to subordinates on a subject after the implementation of the NYPD Mobility Initiative was M =3.14, SD=0.872, $t(50)$=2.925, p=.005. The *t* test showed an increase in the mean from 2.26 to 3.14. The participants indicated that there was a 39% improvement in their ability to conduct this task after the start of the NYPD Mobility Initiative.

Survey Question 26 Results. Table 4.16 shows the response to survey question 26, which asked respondents to rate their ability to facilitate their subordinates before and after the start of the NYPD Mobility Initiative. Forty-nine respondents answered both the before and after portions of survey question 26 and were included in the *t* test. One respondent only answered the before portion of survey question 26 and a different respondent only answered the after portion of survey question 26, therefore these two responses were not included in the *t* test.

Table 4.16

Ability to Facilitate Subordinates

	Poor	Fair	Good	Very good	Excellent	Total respondents	Valid responses
Before	8(16%)	11(22%)	26(52%)	2(4%)	3(6%)	50	49
After	1(2%)	9(18%)	28(56%)	10(20%)	2(4%)	50	49

The *t* test showed that the participants' perceived ability to facilitate subordinates before the implementation of the NYPD Mobility Initiative was *M*=2.65, *SD*=1.011. In comparison, their perceived ability to facilitate subordinates after the implementation of the NYPD Mobility Initiative was *M*=3.06, *SD*=0.801, *t*(48)=3.060, *p*=.004. The *t* test showed an increase in the means from 2.65 to 3.06. The participants indicated that there was a 15% improvement in their perceived ability to conduct this task after the start of the NYPD Mobility Initiative.

Survey Question 27 Results. Table 4.17 shows the response to survey question 27, which asked respondents to rate their ability to mentor their subordinates before and after the start of the NYPD Mobility Initiative. Forty-eight respondents answered the before and after part of survey question 27 and were included in the *t* test. Two respondents only answered the after part of survey question 27, therefore those responses were not included in the *t* test.

Table 4.17

Ability to Mentor Subordinates

	Poor	Fair	Good	Very good	Excellent	Total respondents	Valid responses
Before	8(17%)	8(17%)	24(50%)	7(15%)	1(2%)	48	48
After	2(4%)	6(12%)	31(62%)	9(18%)	2(4%)	50	48

The *t* test showed that the participants' perceived ability to mentor their subordinates before the implementation of the NYPD Mobility Initiative was *M*=2.73, *SD*=1.005. In comparison, their perceived ability to mentor their subordinates after the implementation of the NYPD Mobility Initiative was *M* =3.04, *SD*=0.771, *t*(47)=2.282, *p*=.027. The *t* test showed an increase in the means from 2.73 to 3.04. The participants indicated that there was an 11% improvement in their perceived ability to conduct this task after the start of the NYPD Mobility Initiative.

Survey Question 28 Results. Table 4.18 shows the response to survey question 28, which asked respondents to rate their ability to train subordinates before and after the start of the NYPD Mobility Initiative. Forty-nine respondents answered the before and after part of survey question 28, and the responses were included in the *t* test. Two respondents only answered the after portion of survey question 28, therefore those two responses were not included in the *t* test.

Table 4.18

Ability to Train Subordinates

	Poor	Fair	Good	Very good	Excellent	Total respondents	Valid responses
Before	9(18%)	13(27%)	22(45%)	4(8%)	1(2%)	49	49
After	2(4%)	11(22%)	26(51%)	10(20%)	2(2%)	51	49

The *t* test showed that the participants' perceived ability to train subordinates before the implementation of the NYPD Mobility Initiative was *M*=2.51, *SD*=0.960. In comparison, their perceived ability to train subordinates after the implementation of the NYPD Mobility Initiative was *M*=2.90, *SD*=0.797, *t*(48)=3.150, *p*=.003. The *t* test showed an increase in the means from

2.51 to 2.90. The participants indicated that there was a 16% improvement in their perceived ability to conduct this task after the start of the NYPD Mobility Initiative.

Survey Question 29 Results. Table 4.19 shows the response to survey question 29, which asked respondents to rate their ability to advocate for their subordinates before and after the start of the NYPD Mobility Initiative. Forty-nine respondents answered the before and after part of survey question 29, and the responses were included in the *t* test. One respondent only answered the after portion of survey question 29, therefore that response was not included in the *t* test.

Table 4.19

Ability to Advocate for Subordinates

	Poor	Fair	Good	Very good	Excellent	Total respondents	Valid responses
Before	9(18%)	10(20%)	25(51%)	3(6%)	2(4%)	49	49
After	7(14%)	5(10%)	27(54%)	9(18%)	2(4%)	50	49

The *t* test showed that the participants' perceived ability to advocate for their subordinates before the implementation of the NYPD Mobility Initiative was M=2.59, SD=0.998. In comparison, their perceived ability to advocate for their subordinates after the implementation of the NYPD Mobility Initiative was M=2.90, SD=1.026, $t(48)$=1.879, p=.066. The *t* test showed an increase in the means from 2.59 to 2.90. The participants indicated that there was a 12% improvement in their perceived ability to conduct this task after the start of the NYPD Mobility Initiative

Survey Question 30 Results. Table 4.20 shows the response to survey question 30, which asked respondents to rate their ability to get technical support from the NYPD for issued

smartphones/tablets before and after the start of the NYPD Mobility Initiative. Forty-nine respondents answered survey Question 30.

Table 4.20

Ability to Get Technical Support

	Poor	Fair	Good	Very Good	Excellent	Total Respondents
Before	17(35%)	17(35%)	11(22%)	4(8%)	0(0%)	49
After	10(20%)	7(14%)	15(31%)	16(33%)	1(2%)	49

The *t* test showed that the participants' perceived ability to get technical support from the NYPD for issued smartphones/tablets before the implementation of the NYPD Mobility Initiative was M=2.06, SD=0.944. In comparison, their perceived ability to get technical support from the NYPD for smartphones/tablets after the implementation of the NYPD Mobility Initiative was M=2.84, SD=10.143, $t(48)$=4.834, p<.001. The *t* test showed an increase in the means from 2.06 to 2.84. The participants indicated that there was a 38% improvement in their perceived ability to conduct this task after the start of the NYPD Mobility Initiative.

Questions Related to Research Question 3

Research Question 3 asked to what extent did the NYPD Mobility Initiative change officers' perceived ability to perform tasks that make them more efficient. Ten questions in the survey related to this research question. The 10 survey questions related to Research Question 3 are analyzed, giving the number of respondents for each survey question and their responses using a 1-5 Likert scale. The *t* test result is also given with an analysis. In Questions 21 and 22 some survey respondents did not answer both the before and after part of a question. Pairwise deletion of cases was utilized for these questions. In other words, the participants' response to

that question was not included in that survey questions *t* test. In Questions 11, 18, and 19 one respondent only answered the before portion and a different respondent only answered the after portion of the question. Pairwise deletion of cases was utilized for these questions. Those responses were not used in that question's *t* test. Table 4.21 indicates the survey questions related to Research Question 3.

Table 4.21

Questions Related to Research Question 3

Questions
8. How would you rate your ability to prepare a complaint report BEFORE the start of the NYPD Mobility Initiative? How would you rate your ability to prepare a complaint report AFTER the start of the NYPD Mobility Initiative?
11. How would you rate your ability to locate an address BEFORE the start of the NYPD Mobility Initiative? How would you rate your ability to locate an address AFTER the start of the NYPD Mobility Initiative?
15. How would you rate your ability to find wanted person posters BEFORE the start of the NYPD Mobility Initiative? How would you rate your ability to find wanted person posters AFTER the start of the NYPD Mobility Initiative?
16. How would you rate your ability to find missing persons BEFORE the start of the NYPD Mobility Initiative? How would you rate your ability to find missing persons AFTER the start of the NYPD Mobility Initiative?
17. How would you rate your ability to review Amber Alerts BEFORE the start of the NYPD Mobility Initiative? How would you rate your ability to review Amber Alerts AFTER the start of the NYPD Mobility Initiative?
18. How would you rate your ability to prepare Aided Reports BEFORE the start of the NYPD Mobility Initiative? How would you rate your ability to prepare Aided Reports AFTER the start of the NYPD Mobility Initiative?
19. How would you rate your ability to prepare Accident Reports BEFORE the start of the NYPD Mobility Initiative? How would you rate your ability to prepare Accident Reports AFTER the start of the NYPD Mobility Initiative?
20. How would you rate your ability to update active cases in ECMS BEFORE the start of the NYPD Mobility Initiative? How would you rate your ability to update active cases in ECMS AFTER the start of the NYPD Mobility Initiative?
21. How would you rate your ability to access information in active cases in ECMS BEFORE the start of the NYPD Mobility Initiative? 21. How would you rate your ability to access information in active cases in ECMS AFTER the start of the NYPD Mobility Initiative?
22. How would you rate your ability to send information to nearby officers BEFORE the start of the NYPD Mobility Initiative? How would you rate your ability to send information to nearby officers BEFORE the start of the NYPD Mobility Initiative?

Survey Question 8 Results. Table 4.22 shows the response to survey question 8, which asked respondents to rate their ability to prepare a complaint report before and after the start of the NYPD Mobility Initiative. Sixty-two respondents answered survey question 8.

Table 4.22

Ability to Prepare Complaint Report

	Poor	Fair	Good	Very good	Excellent	Total respondents
Before	5(8%)	15(24%)	29(47%)	7(11%)	6(10%)	62
After	1(2%)	13(21%)	31(50%)	9(15%)	8(13%)	62

The *t* test showed that the participants' perceived ability to prepare a complaint report before the implementation of the NYPD Mobility Initiative was M=2.89, SD=1.057. In comparison, their perceived ability to prepare a complaint report after the implementation of the NYPD Mobility Initiative was M=3.16, SD=9.61, $t(61)$=2.171, p=.034. The *t* test showed an increase in the means from 2.89 to 3.16. The participants indicated that there was a 9% improvement in their perceived ability to conduct this task after the start of the NYPD Mobility Initiative.

Survey Question 11 Results. Table 4.23 shows the response to survey question 11, which asked respondents to rate their ability to locate an address before and after the start of the NYPD Mobility Initiative. Fifty-eight respondents answered both the before and after portions of survey question 11 and were included in the *t* test. One respondent only answered the before portion of survey question 11 and a different respondent only answered the after portion of survey question 11. Those two responses were not used in the *t* test.

Table 4.23

Ability to Locate an Address

	Poor	Fair	Good	Very good	Excellent	Total respondents	Valid responses
Before	16(27%)	20(34%)	18(31%)	5(8%)	0(0%)	59	58
After	1(2%)	6(10%)	18(31%)	22(37%)	12(20%)	59	58

The *t* test showed that the participants' perceived ability to locate an address before the implementation of the NYPD Mobility Initiative was *M*=2.24, *SD*=0.979. In comparison, their perceived ability to locate an address after the implementation of the NYPD Mobility Initiative was *M*=3.64, *SD*=0.968, *t*(57)=7.731, *p*>.001. The *t* test showed an increase in the means from 2.24 to 3.64. The participants indicated that there was a 63% improvement in their perceived ability to conduct this task after the start of the NYPD Mobility Initiative.

Survey Question 15 Results. Table 4.24 shows the response to survey question 15, which asked respondents to rate their ability to find wanted person posters before and after the start of the NYPD Mobility Initiative. There were 59 respondents who answered survey question 15.

Table 4.24

Ability to Find Wanted Persons Posters

	Poor	Fair	Good	Very Good	Excellent	Total Respondents
Before	30(51%)	15(24%)	9(15%)	4(7%)	1(2%)	59
After	4(7%)	8(14%)	19(32%)	18(31%)	10(17%)	59

The *t* test showed that the participants' perceived ability to find wanted persons posters before the implementation of the NYPD Mobility Initiative was *M*=1.83, *SD*=1.036. In

comparison, their perceived ability to find wanted persons posters after the implementation of the NYPD Mobility Initiative was M=3.42, SD=1.113, t(58)=8.362, p>.001. The t test showed an increase in the means from 1.83 to 3.42. The participants indicated that there was an 87% improvement in their perceived ability to conduct this task after the start of the NYPD Mobility Initiative.

Survey Question 16 Results. Table 4.25 shows the response to survey question 16, which asked respondents to rate their ability to find missing persons before and after the start of the NYPD Mobility Initiative. Fifty-nine respondents answered survey question 16.

Table 4.25

Ability to Find Missing Persons

	Poor	Fair	Good	Very Good	Excellent	Total Respondents
Before	27(46%)	19(32%)	12(20%)	0(0%)	1(2%)	59
After	7(12%)	13(22%)	25(42%)	10(17%)	4(7%)	59

The t test showed that the participants' perceived ability to find missing persons before the implementation of the NYPD Mobility Initiative was M=1.81, SD=0.900. In comparison, their perceived ability to find missing persons after the implementation of the NYPD Mobility Initiative was M=2.88, SD=1.0744, t(58)=6.674, p<.001. The t test showed an increase in the means from 1.81 to 2.88. The participants indicated that there was a 59% improvement in their perceived ability to conduct this task after the start of the NYPD Mobility Initiative.

Survey Question 17 Results. Table 4.26 shows the response to survey question 17, which asked respondents to rate their ability to review amber alerts before and after the start of the NYPD Mobility Initiative. Fifty-nine respondents answered survey question 17.

Table 4.26

Ability to Review Amber Alerts

	Poor	Fair	Good	Very Good	Excellent	Total Respondents
Before	40(68%)	11(19%)	7(12%)	1(2%)	0(0%)	59
After	9(15%)	14(24%)	22(37%)	8(14%)	6(10%)	59

The *t* test showed that the participants' perceived ability to review amber alerts before the implementation of the NYPD Mobility Initiative was M=1.47, SD=0.774. In comparison, their perceived ability to review amber alerts after the implementation of the NYPD Mobility Initiative was M=2.8, SD=1.171, $t(58)$=9.186, p>.001. The *t* test showed an increase in the means from 1.47 to 2.8. The participants indicated that there was a 90% improvement in their perceived ability to conduct this task after the start of the NYPD Mobility Initiative.

Survey Question 18 Results. Table 4.27 shows the response to survey question 18, which asked respondents to rate their ability to prepare aided reports before and after the start of the NYPD Mobility Initiative. There were 59 respondents to survey question 18 who answered both the before and after portions of survey question 18. Results were included in the *t* test.

Table 4.27

Ability to Prepare Aided Reports

	Poor	Fair	Good	Very Good	Excellent	Total Respondents
Before	14(24%)	9(15%)	26(44%)	7(12%)	3(5%)	59
After	0(0%)	8(14%)	22(37%)	21(36%)	8(14%)	59

The *t* test showed that the participants' perceived ability to prepare aided reports before the implementation of the NYPD Mobility Initiative was *M*=2.63, *SD*=1.113. In comparison, their perceived ability to prepare aided reports after the implementation of the NYPD Mobility Initiative was *M* =3.47, *SD*=0.897, *t*(58)=4.053, *p*>.001. The *t* test showed an increase in the mean from 2.63 to 3.47. The participants indicated that there was a 32% improvement in their perceived ability to conduct this task after the start of the NYPD Mobility Initiative.

Survey Question 19 Results. Table 4.28 shows the response to survey question 19, which asked respondents to rate their ability to prepare accident reports before and after the start of the NYPD Mobility Initiative. Fifty-six respondents answered both the before and after portions of survey question 28 and were included in the *t* test. One respondent only answered the before portion of survey question 19 and a different respondent only answered the after portion of survey question 19. These two responses were not included in the *t* test.

Table 4.28

Ability to Prepare Accident Reports

	Poor	Fair	Good	Very Good	Excellent	Total Respondents	Valid Responses
Before	11(19%)	9(16%)	26(46%)	7(12%)	4(7%)	57	56
After	3(5%)	13(23%)	19(33%)	16(28%)	6(11%)	57	56

The *t* test showed that the participants' perceived ability to prepare accident reports before the implementation of the NYPD Mobility Initiative was *M*=2.71, *SD*=1.140. In comparison, their perceived ability to prepare accident reports after the implementation of the NYPD Mobility Initiative was *M*=3.20, *SD*=1.086, *t*(55) =2.029, *p*=.047. The *t* test showed an increase

in the means from 2.71 to 3.20. The participants indicated that there was an 18% improvement in their perceived ability to conduct this task after the start of the NYPD Mobility Initiative.

Survey Question 20 Results. Table 4.29 shows the response to survey question 20, which asked respondents to rate their ability to update active cases in ECMS before and after the start of the NYPD Mobility Initiative. Fifty-four respondents answered both the before and after portions of survey question 20 and were included in the *t* test. One respondent answered only the before portion of survey question 20, therefore that response was not included in the *t* test.

Table 4.29

Ability to Update Active Cases in ECMS

	Poor	Fair	Good	Very Good	Excellent	Total Respondents	Valid Responses
Before	21(38%)	13(24%)	11(20%)	8(15%)	2(4%)	55	54
After	10(19%)	12(22%)	14(26%)	14(26%)	4(7%)	54	54

The *t* test showed that the participants' perceived ability to update active cases in ECMS before the implementation of the NYPD Mobility Initiative was M=2.24, SD=1.212. In comparison, their perceived ability to update active cases in ECMS after the implementation of the NYPD Mobility Initiative was M=2.87, SD=1.214, $t(53)$=3.463, p=.001. The *t* test showed an increase in the means from 2.24 to 2.87. The participants indicated that there was a 28% improvement in their perceived ability to conduct this task after the start of the NYPD Mobility Initiative.

Survey Question 21 Results. Table 4.30 shows the response to survey question 21, which asked respondents to rate their ability to access information in active cases in ECMS before and after the start of the NYPD Mobility Initiative. Fifty-two respondents answered the before and

after part of survey question 21 and were included in the *t* test. One respondent only answered the before portion of survey question 21, therefore that response was not included in the *t* test.

Table 4.30

Ability to Access Information in Active Cases in ECMS

	Poor	Fair	Good	Very Good	Excellent	Total Respondents	Valid Responses
Before	24(38%)	13(24%)	10(20%)	5(15%)	1(4%)	53	52
After	13(19%)	13(22%)	16(26%)	6(26%)	4(7%)	52	52

The *t* test showed that the participants' perceived ability to access information in active cases in ECMS before the implementation of the NYPD Mobility Initiative was M=1.98, SD= 1.111. In comparison, their perceived ability to access information in active cases in ECMS after the implementation of the NYPD Mobility Initiative was M =2.56, SD=1.195, $t(51)$=3.267, p=.002. The *t* test showed an increase in the means from 1.98 to 2.56. The participants indicated that there was a 29% improvement in their perceived ability to conduct this task after the start of the NYPD Mobility Initiative.

Survey Question 22 Results. Table 4.31 shows the results to survey question 22, which asked respondents to rate their ability to send information to nearby officers before and after the start of the NYPD Mobility Initiative. Fifty-five respondents answered both the before and after part of survey question 22. One respondent answered only the before portion of question 22, therefore the response was not used in the *t* test.

Table 4.31

Ability to Send Information to Nearby Officers

	Poor	Fair	Good	Very Good	Excellent	Total Respondents	Valid Responses
Before	26(46%)	16(28%)	12(21%)	2(4%)	0(0%)	56	55
After	3(5%)	10(18%)	22(40%)	13(24%)	7(13%)	55	55

The *t* test showed that the participants' perceived ability to send information to nearby officers before the implementation of the NYPD Mobility Initiative was M=1.78, SD=0.896. In comparison, their perceived ability to send information to nearby officers after the implementation of the NYPD Mobility Initiative was M=3.20, SD=1.061, $t(54)$=8.364, p>.001.

The *t* test showed an increase in the means from 1.78 to 3.20. The participants indicated that there was an 80% improvement in their perceived ability to conduct this task after the start of the NYPD Mobility Initiative.

t Test Results. Table 4.32 shows the results of 28 *t* tests performed on the survey questions. The objective of the paired *t* tests was to show that there was a difference in the participant's perceptions of their safety, effectiveness, and efficiency since the start of the NYPD Mobility Initiative.

Table 4.32

T Test Results

Question Number		Mean	Percentage Difference	Std. Deviation	*T*	df	Sig. 2 Tailed
3	after	3.84	65%	0.968	8.322	80	.000
	before	2.33		1.072			
4	after	3.54	101%	0.996	10.283	73	.000
	before	1.76		1.018			
5	after	3.57	92%	1.007	8.863	68	.000
	before	1.86		0.912			
6	after	3.06	88%	1.194	8.140	63	.000
	before	1.63		0.968			
7	after	4.05	75%	0.851	11.012	62	.000
	before	2.32		0.997			
8	after	3.16	9%	0.961	2.171	61	.034
	before	2.89		1.057			
9	after	3.93	82%	0.873	10.365	60	.000
	before	2.16		1.036			
10	after	3.89	84%	0.839	9.746	60	.000
	before	2.11		1.050			
11	after	3.64	63%	0.986	7.731	57	.000
	before	2.24		0.979			
12	after	3.20	14%	0.943	2.488	58	.016
	before	2.81		1.090			
13	after	3.61	81%	0.881	8.74	56	.000
	before	2.0		1.035			
14	after	4.0	152%	0.795	13.874	57	.000
	before	1.59		1.050			
15	after	3.42	87%	1.113	8.362	58	.000
	before	1.83		1.036			
16	after	2.88	59%	1.074	6.674	58	.000
	before	1.81		0.900			
17	after	2.80	90%	1.171	9.186	58	.000
	before	1.47		0.774			
18	after	3.47	32%	0.897	4.053	58	.000
	before	2.63		1.113			

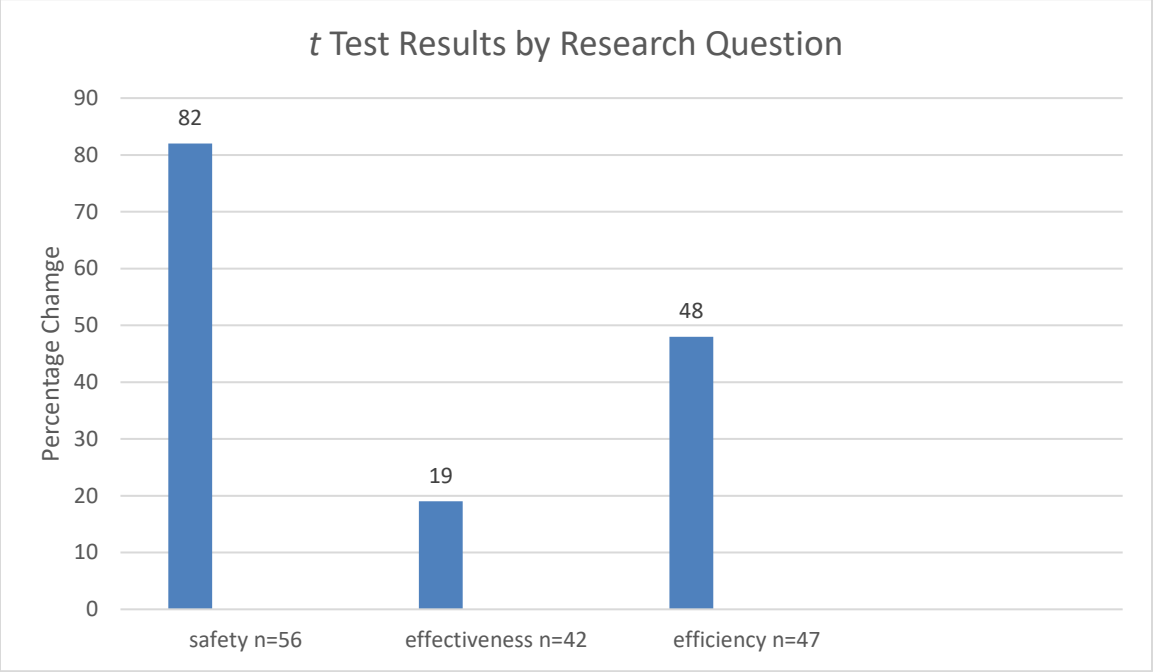
Question Number		Mean	Percentage Difference	Std. Deviation	*T*	df	Sig. 2 Tailed
19	after	3.20	18%	1.086	2.029	55	.047
	before	2.71		1.140			
20	after	2.87	28%	1.214	3.463	53	.001
	before	2.24		1.212			
21	after	2.56	29%	1.195	3.267	51	.002
	before	1.98		1.111			
22	after	3.20	84%	1.061	8.364	54	.000
	before	1.78		0.896			
23	after	3.24	27%	0.839	3.950	50	.000
	before	2.55		1.026			
24	after	3.17	19%	0.834	3.411	51	.001
	before	2.67		1.024			
25	after	3.14	39%	0.872	2.925	50	.005
	before	2.69		0.969			
26	after	3.06	15%	0.801	3.060	48	.004
	before	2.65		1.011			
27	after	3.04	11%	0.771	2.282	47	.027
	before	2.73		1.005			
28	after	2.90	16%	0.797	3.150	48	.003
	before	2.51		0.960			
29	after	2.90	12%	1.026	1.879	48	.066
	before	2.59		0.998			
30	after	2.84	38%	1.143	4.834	48	.000
		2.06		0.944			

All the questions had statistically significant increases in means except for Question 29, which asked about the ability to advocate for subordinates before and after the start of the NYPD Mobility Initiative. It had a significant two-tail of .066, which is greater than .05 and is thus not significant.

t Tests on Research Questions. Figure 4.2 contains the results of the *t* tests performed on the three research questions.

Figure 4.2

t Test Results by Research Questions



Three additional *t* tests were performed by aggregating the survey questions into the appropriate research questions. These *t* tests were performed by aggregating the 10 survey questions related to safety, the eight questions related to effectiveness, and the 10 questions related to efficiency into their own indexes and performing a separate *t* test comparing the respondents' ability to perform certain police-related functions before and after the start of the NYPD Mobility Initiative. For the participants responses to be included in a research questions *t* test, that respondent had to answer both the before and after portion of all the questions in that research question. In other words, a respondent had to answer both the before and after portions of all 10 questions related to safety for the responses to be included in the *t* test for safety. Listwise deletion removed the incomplete responses.

The *t* test showed that the participants' perceived ability to perform the police related tasks related to safety before the implementation of the NYPD Mobility Initiative was *M*=20.1429, *SD*=8.08462. In comparison, their perceived ability to perform police related tasks related to safety after the implementation of the NYPD Mobility Initiative was *M* =36.6429, *SD*=6.8023, *t*(55)=11.001, *p*<.001. The *t* test showed an increase in the means from 20.1429 to 32.6429. The participants indicated an 82% improvement in their perceived ability to conduct safety-related tasks after the start of the NYPD Mobility Initiative.

The *t* test showed that the participants' perceived ability to perform the police-related tasks related to effectiveness before the implementation of the NYPD Mobility Initiative was *M*=20.4651, *SD*=6.7804. In comparison, their perceived ability to perform police related tasks related to effectiveness after the implementation of the NYPD Mobility Initiative was *M* =24.3488, *SD*=5.65215, *t*(42)=3.531 *p*>.001. The *t* test showed an increase in the means from 20.4651 to 24.3488. The participants indicated a 19% improvement in their perceived ability to conduct tasks related to effectiveness after the start of the NYPD Mobility Initiative.

The *t* test showed that the participants' perceived ability to perform the police-related tasks related to efficiency before the implementation of the NYPD Mobility Initiative was *M*=21.0, *SD*=6.42469. In comparison, their perceived ability to perform police related tasks related to efficiency after the implementation of the NYPD Mobility Initiative was *M* =31.0625, *SD*=7.55802, *t*(47)=6.996 *p*>.000. The *t* test showed an increase in the means from 21.0 to 31.0625. The participants indicated a 48% improvement in their perceived ability to conduct tasks related to efficiency after the start of the NYPD Mobility Initiative. The *t* tests had increases in the means for the three research questions. All were significant. Table 4.33 highlights results of *t* tests by research question.

Table 4.33

t Tests by Research Question

	Mean	Percentage Increase	Std. Deviation	*T*	df	Sig (2-tailed)
Safety						
After	36.6429	82%	6.81023	11.002	55	.000
Before	20.1429		8.08462			
Effectiveness						
After	24.3488	19%	5.65215	3.531	42	.001
Before	20.4651		6.78004			
Efficiency						
After	31.0625	48%	7.55802	6.996	47	.000
Before	21.000		6.42469			

Summary of Results

The purpose of this quantitative descriptive retrospective pretest-posttest research study was to examine the extent that NYPD sergeants perceived that the NYPD Mobility Initiative has made the job of police officers safer, more effective, and more efficient. The Sergeants Benevolent Association, the union for NYPD sergeants are required to join, sent a link to this survey to prospective participants, who were experienced sergeants with 10-15 years of experience. Eighty-one sergeants responded and participated in the study. The respondents were asked 28 questions about various police-related functions performed daily by NYPD officers. In all 28 questions, results showed the sergeants perceived that their ability to perform the various tasks had improved since the launch of the NYPD Mobility Initiative. In all the questions, the increases were significant except for survey question 29. Survey question 29 asked respondents to rate their ability to advocate for subordinates before and after the start of the NYPD Mobility Initiative. The sergeants in this study perceived that their ability to perform tasks related to safety

(Research Question 1) had improved by 82%, that their perceived ability to perform tasks related to effectiveness (Research Question 2) had improved by 19%, and that their perceived ability to perform tasks related to efficiency (Research Question 3) had improved by 48% since the start of the NYPD Mobility Initiative.

Chapter 5: Discussion

Introduction

The final chapter of this study discusses the research results involving the 2014 NYPD Mobility Initiative and its effects on police officer safety, effectiveness, and efficiency. This quantitative descriptive retrospective pretest-posttest research study attempted to answer the following questions:

1. To what extent did the NYPD Mobility Initiative change officers' perceived ability to perform tasks that make them safer?
2. To what extent did the NYPD Mobility Initiative change officers' perceived ability to perform tasks that make them more effective?
3. To what extent did the NYPD Mobility Initiative change officers' perceived ability to perform tasks that make them more efficient?

The NYPD Mobility Initiative aimed to improve the public and officers' safety and make the NYPD more effective and efficient. This $160,000,000 program involved the purchase of 35,000 smartphones and 6,000 tablet computers. Every NYPD officer was issued a smartphone, and every New York City police car had a tablet computer installed (NYC.gov., 2014). Smartphones and tablets have a dedicated suite of applications installed. Many NYPD procedures that have been in effect since the 1940s were changed because of the NYPD Mobility Initiative. The NYPD is adding new reports with the goal of making all reports electronic (NYC.gov., 2014).

This quantitative descriptive research study used a retrospective pretest-posttest (RPP). The use of RPP allows researchers to collect pretest and current data simultaneously. The sergeants in this study were asked about their perceptions of their ability to perform various police tasks before and after the start of the NYPD Mobility Initiative. The sergeants were sent a link to this study by the Sergeant's Benevolent Association, the union that NYPD sergeants are required to join. The link took the prospective participants to Qualtrics where they answered the survey questions.

Implications of Findings

The purpose of the NYPD Mobility Initiative is to affect officer safety, effectiveness, and efficiency immediately. This study found that the sergeants surveyed believed their perceived ability to perform tasks related to Research Question 1 (safety) had improved by 82%, that their perceived ability to perform tasks related to Research Question 2 (effectiveness) had improved by 19%, and their perceived ability to perform tasks related to Research Question 3 (efficiency) had improved by 48% since the start of the NYPD Mobility Initiative.

It is not surprising that safety had the largest increase in the sergeants perceived ability to perform tasks. Since the bulk of the improvements for the NYPD Mobility Initiative was dedicated to improving communication and access to information related to safety. Clearly, the sergeants perceived a lack of safety with the previous lack of access to information.

Similarly, effectiveness had the smallest increase in the sergeants perceived ability to perform tasks. The NYPD Mobility Initiative was not focused on supervision and management aspects which have traditionally been evaluated offline.

The increase in efficiency can be explained by the fact that most of the tasks were available to NYPD officers prior to the NYPD Mobility Initiative. Nevertheless, a 48%

improvement seems small compared to the 82% increase in safety; this large increase demonstrated the change in efficiency by the NYPD Mobility Initiative.

The theoretical framework for this study was the task-technology fit theory. TTF was developed by Goodhue in 1998, and states that for technology to improve performance, the technology must fit the functions performed by an individual who uses the technology. In this study the 81 sergeants found their perceived ability to perform police related tasks had improved since the start of the NYPD Mobility Initiative. The sergeants in the survey perceive that the smartphones/tablets and applications that are part of the NYPD Mobility Initiative fit the tasks they perform daily and therefore their performance has improved.

This research study filled a gap in the research in the use of portable devices such as smartphones and tablets with dedicated applications by police officers. Many police agencies are considering deploying these portable devices in their agencies and may find this study useful.

After the death of George Floyd in Minneapolis, the *defund the police* movement spread across the United States. There were calls to reduce police budgets and to spend money on other programs. Mayors, governors, and other officials must justify spending additional money on the police or police equipment. This study may help these leaders determine if they should allocate funds to purchase smartphone/tablets to improve the effectiveness and efficiency of their police departments and improve safety for officers and the public.

In summary this retrospective descriptive pretest-posttest research study found that NYPD sergeants perceive that their abilities to perform police related tasks has improved since the launch of the NYPD Mobility Initiative in 2014.

Implications for Other NYPD Programs

Other NYPD programs were directly affected by the NYPD Mobility Initiative, including neighborhood policing, amber alerts, and domestic violence prevention programs.

Neighborhood Policing Initiative

The surveyed sergeants perceived that communication with complainants had improved dramatically, which is essential for neighborhood policing. In 2015 the NYPD launched neighborhood policing to encourage interactions between the community and police officers in an effort to reduce crime (Beck et al., 2022). In order to affect better communications, police officers needed the ability to communicate with complainants in a more timely and responsive way. While linked to safety concerns, this byproduct improved communication with the community. Survey Question 5 asked respondents to rate their ability to contact complainants before and after the start of the NYPD Mobility Initiative. The respondents reported that their perceived ability to contact complainants had improved by 92% since the start of the NYPD Mobility Initiative. Survey Question 6 asked respondents to rate the ability for complainants to contact them before and after the start of the NYPD Mobility Initiative. The respondents reported that their perceived ability for complainants to contact them had improved by 88% since the start of the NYPD Mobility Initiative. This fortuitous outcome aided both safety and improved neighborhood policing under the community policing umbrella.

Domestic Violence Reduction Program

The spread of domestic violence is evident by the 230,000 calls a year to which the NYPD responds. In addition to the need to extricate domestic violence victims from dangerous and unhealthy situations, domestic violence calls are potentially dangerous to responding officers, so it is critical for the officers who respond to domestic violence calls to have a

complete history of prior domestic incidents at a location (NYC.gov, 2023b). Survey Question 4 asked respondents to rate their ability to check for prior domestic incident reports before and after the start of the NYPD Mobility Initiative. The respondents found a 101% increase in their perceived ability to review prior domestic incident reports since the start of the NYPD Mobility Initiative. This is a clear indication of prior lack of information in relation to domestic violence history for a particular location or individuals, and the 101% improvement demonstrated a critical information gap. It is critical for the officers who respond to domestic violence calls to have a complete history of prior domestic incidents at a location.

Amber Alerts

Amber alerts are reports of abducted children. The NYPD and other local law enforcement agencies are required to participate in this program by the Protect Act, which was signed into law by President George H. W. Bush in 1993. Survey Question 17 asked respondents to rate their ability to review amber alerts before and after the start of the NYPD Mobility Initiative. The respondents reported a 90% increase in their perceived ability to review these alerts after the start of the NYPD Mobility Initiative, indicating a lack of knowledge of recently abducted children in a timely manner that could potentially lead to a successful recovery of the child. The faster police transmit these alerts, the more likely a missing child will be found alive (U.S. Department of Justice, 2019).

Implications for NYPD Operations

By far, the largest increase of all the survey questions was the ability to determine the history of 911 calls at a location. Survey Question 14 asked respondents to rate their ability to determine the history of 911 calls before and after the start of the NYPD Mobility Initiative. The respondents reported a 152% increase in their perceived ability to determine the history of 911

calls at a location since the start of the NYPD Mobility Initiative. While this admirable increase demonstrated greater knowledge of potential issues that may occur at a response location, this also demonstrated a previous lack of information in the past. In essence, NYPD police officers were entering incidents blindly despite the fact that information was readily available to assist in response and tactical decisions.

Limitations

Response burden was an issue. Eighty-one respondents started the survey; by survey Question 6, the number of respondents dropped to 60 which was 80% of respondents, by survey Question 30, the number of respondents who responded to this question dropped to 49, which is 60% of respondents. Respondent burden has four components, length of the survey, the effort required, stress as perceived by respondent, and frequency of surveys (Bradburn, 1978). The 28 questions were too long for many of the respondents, who stopped answering questions or skipped questions. Although robust procedures of pairwise and listwise deletion were used for the analyses as appropriate, there is always a concern for missing or incomplete data pairs producing Type I errors. Due to the low *p*-values of most of the response pairs, Type I errors are highly unlikely.

Recommendations

The following are recommendations for improvements to the NYPD Mobility Initiative and recommendations for future study.

Recommendation for Improvements to NYPD Mobility Initiative

1. The forms application needs to be improved. In this study NYPD sergeants only reported a 9% improvement in their perceived ability to prepare a complaint report after the start of the NYPD Mobility Initiative. The NYPD website shows that preparing complaint reports

using the forms application is a "projected capacity" (NYPD, 2023, p. 1). Officers are still handwriting these reports. This important feature needs to be digital. The NYPD must mandate the use of the forms application. The sergeants also reported an 18% increase in their perceived ability to prepare accident reports, which is also located in forms.

2. Improve communication methods between dispatchers and patrol officers. The sergeants reported their perceived ability to interact with radio dispatcher had improved by 11% since the start of the NYPD Mobility Initiative. It was believed that radio dispatchers would have more time to interact with officers since many of their previous functions were automated by the NYPD Mobility Initiative. The sergeants in this study perceived that this was not happening. A communication protocol using smartphones should be developed and deployed immediately.

3. The NYPD should survey users to determine what applications need improvement. This will allow these applications to be improved with information from actual users. Online surveys or focus groups can be used for this purpose.

4. Incorporate aspects of the NYPD Mobility Initiative with supervision and management reports. The eight survey questions related to Research Question 2, effectiveness, had an improvement of 19%, the smallest increase in the three research questions. These questions asked the respondents to rate their ability to direct subordinates, mentor subordinates, provide guidance, coaching, facilitating, mentoring, train subordinates and advocate for their subordinates. Specifically, response and service time, accident reports, proper dispositions (closure of incidents), and aided report (medical assistance to citizens) can be directly measured from the NYPD Mobility Initiative. This will also require the inclusion of complaint reports already mentioned as this is the lion's share of police officer activity. Additional training should

be given to NYPD supervisors on how to use the additional capabilities of the NYPD Mobility Initiative to better perform these tasks.

Recommendations for Future Study

1. Expand survey to include more ranks and personnel. This survey was only sent to officers to the rank of sergeant, who comprise 13% of uniformed officers. Including other ranks in a future study, especially police officers, who comprise 65% of uniformed officers, and detectives, who comprise 15% of uniformed officers, would make the survey more inclusive and possibly give better results (NYPD, 2022).

2. Expand the survey to more senior police officers. This survey was sent to sergeants with 10-14 years of experience. Officers across all ranks with 10-14 years of experience comprise 17% of uniformed officers. Surveying more experienced officers with 15-19 years of experience, who comprise 24% of uniformed officers, or officers with 20-24 years of experience, who comprise 6% of uniform officers, would add to this study by giving a different perspective. They had more experience with NYPD procedures before the Mobility Initiative started.

3. The survey can be shortened to reduce response burden. Eighty-one respondents started the survey; by Question 30 the number of respondents dropped to 49, which is 60% of respondents. Some questions can be eliminated as respondents may have found the questions too similar. The questions on guidance, coaching, and facilitating can be eliminated. The questions on ability to contact complainants and complainant's ability to contact you should be rewritten to form one question.

4. Create a survey to administer to police officers who have no knowledge of

NYPD procedures prior to the NYPD Mobility Initiative. This would require changing the format of the questions to no longer include a before and after portion, however these officers may have a different perspective.

Conclusion

This section summarizes the quantitative descriptive retroactive pretest-posttest research study titled The NYPD Mobility Initiative and its Impact on Police Officers.

NYPD Mobility Initiative

The Mobility Initiative was launched by the NYPD in 2014. The program involved the purchase of 35,000 smartphones and 6,000 tablet computers and had a start-up cost of $160,000,000. A smartphone was issued to every NYPD officer and every marked police car had a tablet computer installed. Applications were custom designed for smartphones/tablets (NYPD, 2014). Mayor Bill de Blasio stated, at the press conference announcing the launch of the NYPD Mobility Initiative, “In an emergency, every minute counts, and this initiative will allow our officers in the field to get up-to-date, accurate information and process critical information anywhere in the city” (Vance, 2014, p. 1). Mayor de Blasio stated that the purpose of the NYPD Mobility Initiative was to immediately affect officer efficiency, effectiveness, and safety (New York City, 2014).

Problem Statement

Before the launch of the NYPD Mobility Initiative in 2014, NYPD officers received their assignments from radio dispatchers using the police radio. Officers would write information on the assignment on note pads. If they wanted any additional information, they had to ask the radio dispatcher, who would read them the information over the police radio. If the officers wanted to check state or federal databases, the radio dispatchers could conduct these queries if they were

not too busy. This process had not changed significantly since the 1940s. This was making the NYPD less efficient, less effective, and more dangerous for officers and the public (NYPD, 2014).

This quantitative descriptive pretest-posttest study examined the degree that NYPD sergeants perceive that the NYPD Mobility Initiative has made the job of police officers safer, more effective, and more efficient. If NYPD officers believe that the smartphones and tablets that were issued as part of the NYPD Mobility Initiative fits the tasks they are required to perform daily; this will be reflected in TTF, which will increase. This should reflect improved officer performance (Goodhue & Thompson, 1995; Parkes, 2013).

Theoretical Rational

The theoretical framework that supports this study is the task-technology fit theory, which was developed in 1988 by Goodhue. Goodhue believed that for information technology to improve an individual's performance, the technology must fit the tasks performed by the individual that used the technology. TTF is the degree that technology helps a worker complete his/her job. TTF is reduced when there is a gap between technology functioning and a worker's tasks (Goodhue & Thompson, 1995; Ioimo & Aronson, 2003).

Literature Review

The literature review examined scholarly articles on police efficiency in the United States and internationally to determine how researchers defined police efficiency and efficient police departments. Police efficiency is the police performing their jobs correctly and without waste (Miller et al., 2014). Data envelopment analysis is a proven model to examine police efficiency. DEA was developed by Charmes et al. in 1978. It is a performance measurement technique that measures the relative efficiency of decision-making units. DMUs can be the number of sworn

officers, number of police vehicles, and number of civilian workers. Outputs can be crime rates for murders, other violent crimes, and property crimes. Researchers have found that DEA can use different DMUs to compare police departments, even if they are located in different locations or have different missions (Deangelo et al., 2014; Gorman & Ruggiero, 2008)

The literature review examined scholarly articles on safety. A study by Pang and Pavlou in 2019 found that IT use for criminal intellegence, prediction, and investigation is associated with a 42-50% reduction in the number of officers killed or assaultes. They also found that for a large police agency that covers a city with over a million residents such as the NYPD, IT use for criminal intelligence, prediction and investigations, means a reduction of up to 199 assaults/deaths to officers (Pang & Pavlou, 2019).

The literature review examined scholarly articles on police effectiveness. Studies have shown that technology improves police effectiveness (Agrawal et al., 2003; Danziger & Kraemer, 1985; Ioimo & Aronson, 2004; Lum et al., 2014; Mastrobuni, 2020). Danziger and Kraemer found that the impact of computers helped detectives solved 37% more cases. Agrawal et al. (2003) found that the impact of mobile computer terminal use in police cars had the equivalence of deploying 6,174 more officers. Iomino and Aronson (2004) found that computers inproved detective productivity. Koper et al. (2014) found that officers will only use new technolgy if it helps them to perform their jobs. Mastrobuni (2020) found that predictive policing would increase the number of arrests.

The literature review examined other scholarly articles on police use of technology in the United States. Strom (2017), found that technology was increasing efficiency in U.S. law enforcement agencies and that 96% of agencies in the US were implementing new technology.

Research Design

This quantitative descriptive research study used a retrospective pretest-posttest design. RPP allowed the researcher to collect pretest and current data simultaneously. RPP was recommended by Howard et al. (1979) to reduce response shift bias. This occurs when participants in studies use a different standard to rate themselves between two self-report measures (Klatt & Taylor-Powell, 2005). More recently, Little et al. (2020) studied RPP by examining several studies that use RPP and found that RPP can identify the effects of a program. The participants in this study were asked their opinions about their abilities to perform 28 police-related functions before and after the start of the NYPD Mobility Initiative in 2014. A pretest was not possible as the NYPD Mobility Initiative started in 2014.

Research Participants

The population for this quantitative descriptive pretest-post-research study was sergeants in the NYPD with 10-14 years of service. Sergeants hold a crucial role in the NYPD (Iannone, 1987). Sergeants are responsible for ensuring their subordinates are following NYPD procedures and have considerable influence over them. Sergeants must help their subordinates when they have problems with technology. Sergeants with 10-14 years of experience were selected because they were members of the NYPD prior to 2014 and had experience with the policies and procedures in effect then.

Instrument Used in Data Collection

This study used an online survey consisting of 28 questions and used a 5-point Likert scale. A score of 1 means *poor* and a score of 5 means *excellent*. The survey consisted of 10 questions related to Research Question 1 (safety), eight questions related to Research Question 2 (effectiveness), and 10 questions related to Research Question 3 (efficiency). The Sergeants

Benevolent Association, the union NYPD sergeants are required to join, agreed to send out e-mails to prospective participants.

Results

Eighty-one sergeants took the survey. The results were transferred to SPSS Version 25. Paired *t* tests were conducted on the 28 survey questions. In addition, three paired *t* tests were conducted by aggregating the survey questions into the appropriate research questions. The *t* tests showed improvements in the participants perceived ability to perform all police related tasks in the survey questions. All were significant except for survey question 29, the ability to advocate for subordinates before and after the start of the NYPD Mobility Initiative. This question had a 12% increase. However, the response did not reach the level of significance.

Survey Question 5 asked respondents to rate their ability to contact complainants before and after the start of the NYPD Mobility Initiative. The respondents reported that their perceived ability to contact complainants had improved by 92% since the start of the NYPD Mobility Initiative. Survey Question 6 asked respondents to rate the ability for complainants to contact them before and after the start of the NYPD Mobility Initiative. The respondents reported that their perceived ability for complainants to contact them had improved by 88% since the start of the NYPD Mobility Initiative. This improvement in communications is important for neighborhood policing.

Survey Question 17 asked respondents to rate their ability to review amber alerts before and after the start of the NYPD Mobility Initiative. The respondents reported a 90% increase in their perceived ability to review these alerts after the start of the NYPD Mobility Initiative. The faster police transmit these alerts, the more likely a missing child will be found alive (U.S. Department of Justice, 2019).

The largest increase in the survey was survey Question 14, which asked respondents to rate their ability to determine the history of 911 calls before and after the start of the NYPD Mobility Initiative. The respondents reported a 152% increase in their perceived ability to determine the history of 911 calls at a location since the start of the NYPD Mobility Initiative.

The 28 survey questions were grouped into the three related research questions. Three additional *t* tests were performed by taking the 10 survey questions related to safety (Research Question 1), the eight questions related to effectiveness (Research Question 2), and the 10 questions related to efficiency (Research Question 3) and performing a separate *t* test comparing the respondents' perceived ability to perform certain police-related functions before and after the start of the NYPD Mobility Initiative.

This study found that the sergeants surveyed believed their perceived ability to perform tasks related to Research Question 1 (safety) had improved by 82%, that their perceived ability to perform tasks related to Research Question 2 (effectiveness) had improved by 19%, and their perceived ability to perform tasks related to Research Question 3 (efficiency) had improved by 48% since the start of the NYPD Mobility Initiative.

This study has shown that NYPD sergeants perceive that the smartphones/tablets and the dedicated applications created for the NYPD Mobility Initiative have made them safer, more efficient, and more effective. Other police departments should adapt the use of smartphones and tablets to improve their officer perceptions of their safety, effectiveness, and efficiency.

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Appendix A

Qualtrics

Sergeants' Survey

Start of Block: Default Question Block

Q1

St. John Fisher University Institutional Review Board Statement of Informed Consent for Adult Participants

Title of Study: The NYPD Mobility Initiative and its Impact on Police Officers
Summary of Key Information:

• You are being asked to be a participant in a research study that examines to what extent does the NYPD Mobility Initiative change officers' perceived ability to perform tasks that make them safer, more efficient, and more effective. As with all research studies, participation is voluntary.

• The purpose of this study is to examine the effect that the NYPD Mobility Initiative has had on various police-related functions that are performed on a daily basis by NYPD officers. The online survey will ask about your ability to perform these tasks before and after the start of the NYPD Mobility Initiative.

• Sergeants with 10-14 years of experience will participate in this study.

• If you agree to take part in this study, you will be involved in this study for 15-20 minutes

• If you agree to take part in this study, you will be asked questions about your ability to complete various police-related tasks before and after the start of the NYPD Mobility Initiative.

• We believe this study has no more than minimal risk.

• You may not directly benefit from this research; however, we hope that your participation in the study may inform NYPD administrators, legislators, and other criminal justice professionals on officers' perceptions on whether the NYPD Mobility Initiative is meeting its goals.

Detailed Study information

The study will examine the effect that the NYPD Mobility Initiative has had on various police-related functions that are performed on a daily basis by NYPD officers. The online survey will ask about your ability to perform these tasks before and after the start of the NYPD Mobility Initiative. This study is being conducted by: Paul Lichtbraun, who is a student in the Educational

Leadership Program at St. John Fisher University. The Dissertation Chair is Dr. W. Jeff Wallis in the Educational Leadership Program at St. John Fisher University. You were selected as a possible participant because you are a sergeant in the New York City Police Department. Please read this consent form and ask any questions you have before agreeing to be in the study.

Procedures

If you agree to be in this study, you will be asked to do the following: You will take an online survey that will take 15-20 minutes to complete. You may refuse to answer any questions and may withdraw at any time.

Risks/Benefits

There is no risk in participating in this study. The benefit of this study is that it will inform NYPD administrators, legislators, and other criminal justice professionals on officers' perceptions on whether the NYPD Mobility Initiative is meeting its goals.

Compensation/Incentives

There is no compensation or incentives for participating in this study.

Confidentiality/Privacy

The records of this study will be kept private, and your confidentiality will be protected. In any sort of report the researcher(s) might publish, no identifying information will be included. The names of the participants will not be collected. All data will be kept in a password-protected computer in a password-protected file. The records for this study will be kept for 3 years and then destroyed.

VOLUNTARY NATURE OF THE STUDY:

Participation in this study is voluntary and requires your informed consent. Your decision whether or not to participate will not affect your current or future relations with St. John Fisher University or with the Sergeants Benevolent Association. If you decide to participate, you are free to skip any question that is asked. You may also withdraw from this study at any time without penalty.

CONTACTS, REFERRALS, AND QUESTIONS:

If you have questions, **you are encouraged** to contact the researcher, Paul Lichtbraun, at 347-723-4980 or by e-mail at pml06084@sjfc.edu

The Institutional Review Board of St. John Fisher University has reviewed this project. For any

concerns regarding this study/or if you feel that your rights as a participant (or the rights of another participant) have been violated or caused you undue distress (physical or emotional distress), please contact the SJFC IRB administrator by phone during normal business hours at (585) 385-8012 or irb@sjfc.edu.

STATEMENT OF CONSENT:
"Electronic Consent: Clicking on the "Agree" button below indicates that:
• I have read the above information.
• I voluntarily agree to participate.
• I am at least 18 years of age.
If you do not wish to participate in the study, please decline participation by clicking on the "Disagree" button below."

- ○ I agree, begin the study (1)
- ○ I Disagree, I do not wish to participate (2)

Skip To: End of Survey If St. John Fisher University Institutional Review Board Statement of Informed Consent for Adult P... = I Disagree, I do not wish to participate

Page Break

Q2 How many years have you been a NYPD officer

- ○ 0-4 years (1)
- ○ 4-9 years (2)
- ○ 10-14 years (3)
- ○ 15-19 years (4)
- ○ 20 or more years (5)

Skip To: End of Survey If How many years have you been a NYPD officer != 10-14 years

Page Break

Q3 How would you rate your .....

	1 poor	2 fair	3 good	4 very good	5 excellent
Ability to conduct a warrant check on a suspect BEFORE the start of the NYPD Mobility Initiative	○	○	○	○	○
Ability to conduct a warrant check on a suspect AFTER the start of the NYPD Mobility Initiative	○	○	○	○	○

Page Break

Q4 How would you rate your .....

	1 poor	2 fair	3 good	4 very good	5 excellent
Ability to check for prior Domestic incident reports BEFORE the start of the NYPD Mobility Initiative	○	○	○	○	○
Ability to check for prior Domestic incident reports AFTER the start of the NYPD Mobility Initiative	○	○	○	○	○

Page Break

Q5 How would you rate your.....

	1 poor	2 fair	3 good	4 very good	5 excellent
Ability to contact a complainant BEFORE the start of the NY PD mobility Initiative	○	○	○	○	○
Ability to contact a complainant AFTER the start of the NYPD mobility Initiative	○	○	○	○	○

Page Break

Q6 How would you rate your....

	1 poor	2 fair	3 good	4 very good	5 excellent
Ability for complainants to contact you BEFORE start of NYPD Mobility Initiative	○	○	○	○	○
Ability for complainants to contact you AFTER start of NYPD Mobility Initiative	○	○	○	○	○

Page Break

Q7 How would you rate your....

	1 poor	2 fair	3 good	4 very good	4 excellent
Ability to check the validity of a driver's License BEFORE the start of the NYPD Mobility Initiative	○	○	○	○	○
Ability to check the validity of a driver's License AFTER the start of the NYPD Mobility Initiative	○	○	○	○	○

Page Break

Q8 How would you rate your....

	1 poor	2 fair	3 good	4 very good	5 excellent
Ability to prepare a complaint report BEFORE the start of the NYPD Mobility Initiative	○	○	○	○	○
Ability to prepare a complaint report AFTER the start of the NYPD Mobility Initiative	○	○	○	○	○

Page Break

Q9 How would you rate your....

	1 poor	2 fair	3 good	4 very good	5 excellent
Ability to check for active arrest warrants BEFORE the start of the NYPD Mobility Initiative	○	○	○	○	○
Ability to check for active arrest warrants AFTER the start of the NYPD Mobility Initiative	○	○	○	○	○

Page Break

Q10 How would you rate your....

	1 poor	2 fair	3 good	4 very good	5 excellent
Ability to determine if a car is stolen BEFORE the start of the NYPD Mobility Initiative	○	○	○	○	○
Ability to determine if a car is stolen AFTER the start of the NYPD Mobility Initiative	○	○	○	○	○

Page Break

Q11 How would you rate your....

	1 poor	2 fair	3 good	4 very good	5 excellent
Ability to locate an address BEFORE the start of the NYPD Mobility Initiative	○	○	○	○	○
Ability to locate an address AFTER the start of the NYPD Mobility Initiative	○	○	○	○	○

Page Break

Q12 How would you rate your....

	1 poor	2 fair	3 good	4 very good	5 excellent
Ability to interact with radio dispatcher BEFORE the start of the NYPD Mobility Initiative	○	○	○	○	○
Ability to interact with radio dispatcher AFTER the start of the NYPD Mobility Initiative	○	○	○	○	○

Page Break

Q13 How would you rate your....

	1 poor	2 fair	3 good	4 very good	5 excellent
Ability to access NYPD databases as needed BEFORE the start of the NYPD Mobility Initiative	○	○	○	○	○
Ability to access NYPD databases as needed AFTER the start of the NYPD Mobility Initiative	○	○	○	○	○

Page Break

Q14 How would you rate your....

	1 poor	2 fair	3 good	4 very good	5 excellent
Ability to determine the history of 911 calls at a location BEFORE the start of the NYPD Mobility Initiative	○	○	○	○	○
Ability to determine the history of 911 calls at a location AFTER the start of the NYPD Mobility Initiative	○	○	○	○	○

Page Break

Q15 How would you rate your....

	1 poor	2 fair	3 good	4 very good	5 excellent
Ability to find wanted person posters BEFORE the start of the NYPD Mobility Initiative	○	○	○	○	○
Ability to find wanted person posters AFTER the start of the NYPD Mobility Initiative	○	○	○	○	○

Page Break

Q16 How would you rate your....

	1 poor	2 fair	3 good	4 very good	5 excellent
Ability to find missing persons BEFORE the start of the NYPD Mobility Initiative	○	○	○	○	○
Ability to find missing persons AFTER the start of the NYPD Mobility Initiative	○	○	○	○	○

Page Break

Q17 How would you rate your....

	1 poor	2 fair	3 good	4 very good	5 excellent
Ability to review Amber Alerts BEFORE the start of the NYPD Mobility Initiative	○	○	○	○	○
Ability to review Amber Alerts AFTER the start of the NYPD Mobility Initiative	○	○	○	○	○

Page Break

Q18 How would you rate your....

	1 poor	2 fair	3 good	4 very good	5 excellent
Ability to prepare Aided Reports BEFORE the start of the NYPD Mobility Initiative	○	○	○	○	○
Ability to prepare Aided Reports AFTER the start of the NYPD Mobility Initiative	○	○	○	○	○

Page Break

Q19 How would you rate your....

	1 poor	2 fair	3 good	4 very good	5 excellent
Ability to prepare Accident Reports BEFORE the start of the NYPD Mobility Initiative	○	○	○	○	○
Ability to prepare Accident Reports AFTER the start of the NYPD Mobility Initiative	○	○	○	○	○

Page Break

Q20 How would you rate your....

	1 poor	2 fair	3 good	4 very good	5 excellent
Ability to update active cases in ECMS BEFORE the start of the NYPD Mobility Initiative	○	○	○	○	○
Ability to update active cases in ECMS AFTER the start of the NYPD Mobility Initiative	○	○	○	○	○

Page Break

Q21 How would you rate your....

	1 poor	2 fair	3 good	4 very good	5 excellent
Ability to access information in active cases in ECMS BEFORE the start of the NYPD Mobility Initiative	○	○	○	○	○
Ability to access information in active cases in ECMS AFTER the start of the NYPD Mobility Initiative	○	○	○	○	○

Page Break

Q22 How would you rate your....

	1 poor	2 fair	3 good	4 very good	5 excellent
Ability to send information to nearby officers BEFORE the start of the NYPD Mobility Initiative	○	○	○	○	○
Ability to send information to nearby officers AFTER the start of the NYPD Mobility Initiative	○	○	○	○	○

Page Break

Q23 How would you rate your....

	1 poor	2 fair	3 good	4 very good	4 excellent
Ability to direct subordinates BEFORE the start of the NYPD Mobility Initiative	○	○	○	○	○
Ability to direct subordinates AFTER the start of the NYPD Mobility Initiative	○	○	○	○	○

Page Break

Q24 How would you rate your....

	1 poor	2 fair	3 good	4 very good	5 excellent
Ability to provide guidance to subordinates BEFORE the start of the NYPD Mobility Initiative	○	○	○	○	○
Ability to provide guidance to subordinates AFTER the start of the NYPD Mobility Initiative	○	○	○	○	○

Page Break

Q25 How would you rate your....

	1 poor	2 fair	3 good	4 very good	5 excellent
Ability to provide coaching to subordinates BEFORE the start of the NYPD Mobility Initiative	○	○	○	○	○
Ability to provide coaching to subordinates AFTER the start of the NYPD Mobility Initiative	○	○	○	○	○

Page Break

Q26 How would you rate your....

	1 poor	2 fair	3 good	4 very good	5 excellent
Ability to facilitate your subordinates BEFORE the start of the NYPD Mobility Initiative	○	○	○	○	○
Ability to facilitate your subordinates AFTER the start of the NYPD Mobility Initiative	○	○	○	○	○

Page Break

Q27 How would you rate your....

	1 poor	2 fair	3 good	4 very good	5 excellent
Ability to mentor your subordinates BEFORE the start of the NYPD Mobility Initiative	○	○	○	○	○
Ability to mentor your subordinates AFTER the start of the NYPD Mobility Initiative	○	○	○	○	○

Page Break

Q28 How would you rate your....

	1 poor	2 fair	3 good	4 very good	5 excellent
Ability to train your subordinates BEFORE the start of the NYPD Mobility Initiative	○	○	○	○	○
Ability to train your subordinates AFTER the start of the NYPD Mobility Initiative	○	○	○	○	○

Page Break

Q29 How would you rate your....

	1 poor	2 fair	3 good	4 very good	5 excellent
Ability to advocate for your subordinates BEFORE the start of the NYPD Mobility Initiative	○	○	○	○	○
Ability to advocate for your subordinates AFTER the start of the NYPD Mobility Initiative	○	○	○	○	○

Page Break

Q30 How would you rate your....

	1 poor	2 fair	3 good	4 very good	5 excellent
Ability to get technical support from the NYPD for issued smartphones/tablets BEFORE the start of the NYPD Mobility Initiative	○	○	○	○	○
Ability to get technical support from the NYPD for issued smartphones/tablets AFTER the start of the NYPD Mobility Initiative	○	○	○	○	○

Page Break

End of Block: Default Question Block

Start of Block: end of survey

End of Survey

We thank you for your time spent taking this survey.

Your response has been recorded.

Appendix B

Alignment of Research Questions to Survey Questions

Question	Research Question 1	Research Question 2	Research Question 3
1	n/a	**n/a**	**n/a**
2	**n/a**	**n/a**	**n/a**
3	Yes	No	No
4	Yes	No	No
5	Yes	No	No
6	Yes	No	No
7	Yes	No	No
8	No	No	Yes
9	Yes	No	No
10	Yes	No	No
11	No	No	Yes
12	Yes	No	No
13	Yes	No	No
14	Yes	No	No
15	No	No	Yes
16	No	No	Yes
17	No	No	Yes

Question	Research Question 1	Research Question 2	Research Question 3
18	No	No	Yes
19	No	No	Yes
20	No	No	Yes
21	No	No	Yes
22	No	No	Yes
23	No	Yes	No
24	No	Yes	No
25	No	Yes	No
26	No	Yes	No
27	No	Yes	No
28	No	Yes	No
29	No	Yes	No
30	No	Yes	No