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Strategies to Decrease Disorder and Diminishing Transit Ridership Through Fare Enforcement

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This is to certify that the doctoral study by

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Abstract

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Doctoral Study Submitted in Partial Fulfillment

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Abstract

Urban rail transit systems are experiencing a decrease in ridership in part due to the perception of increased crime and disorder. To ensure passengers continue riding rail transportation, agency leaders must develop strategies to decrease crime and disorder caused by fare evasion. Grounded in the Kano model and Lean Six Sigma, the purpose of this qualitative case study was to explore strategies urban rail transit leaders use to reduce declining ridership associated with a perceived disorder caused by fare evasion. Data were collected using semistructured interviews of six urban rail transit leaders who manage fare enforcement efforts and a review of documents associated with fare enforcement. Data were analyzed using thematic analysis, and three themes were identified: (a) hot spot policing, (b) focus on education over enforcement, and (c) investigative follow-up. A key recommendation is for transit leaders to conduct focused fare enforcement to educate transit riders while remaining attentive to criminal activity. The implications for positive social change include the potential to lower urban traffic congestion based on increased rail ridership. Additionally, reducing crime will allow those who rely on public transportation, such as the economically challenged, physically challenged, the elderly, and urban youth, to conduct daily tasks.

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Dedication

I dedicate this Doctoral of Business Administration (DBA) research study to my stepfather, Guy Beaven. Although he passed away before I started this doctoral journey, his encouragement and wisdom, carried me through to the end. He challenged me to dream big but follow through with hard work.

I would also like to thank my mother, Dianne, who has always backed me in my endeavors. My sister, Susan, has helped me with too many computer-related issues to count. Finally, I would like to thank my dad, Cliff, for all his support through the years.

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Section 1: Foundation of the Study

Urban rail transit leaders are tasked with ensuring their patrons have a safe ride, free of crime and disorder. This is not only a sound business practice that affords a foundation of customer satisfaction, but it also provides the basic service of transportation for those in the region. A prosperous transit system reduces congestion and pollution in the region, which benefits all commuters. Therefore, it is paramount that transit leaders develop a strategy to reduce crime and disorder in their systems. Through the course of this multiple case study, I studied how transit agencies use fare enforcement to lower overall crime and disorder.

Background of the Problem

Due to the built environment, urban travelers have numerous modes of travel to choose from (De Vos et al., 2016). Commuters have the option to drive, use a ride-hailing service, ride a bicycle, walk, or take a bus or train. Due to recent highway congestion pricing, bus transportation has become increasingly popular (Hudspeth & Wellman, 2018). Urban rail transit systems are experiencing a decrease in ridership due to the perception of increased crime and disorder. The perception of crime on rail transportation has a significant effect on the customer satisfaction of riders (Akabal et al., 2017). Unfortunately, by their very nature, urban rail systems are crime generators because they provide a means for criminals and victims to meet (Irvin-Erickson & Vigne, 2015).

To patrol urban rail transit systems more effectively, leaders must use place-based or hot spot policing. This entails placing officers at specific microgeographic, high crime locations (Lazzati & Menichini, 2016). Fare enforcement provides a mechanism by

which urban rail transit leaders can conduct proactive enforcement at these hot spots. Hot spot policing is a means by which urban rail transit can target disorder and lower passengers' fears.

Problem Statement

Public transportation systems attract crimes due to the transportation of large numbers of targets for criminals in an environment providing little interference (Gallison & Andresen, 2017). Public transportation ridership has declined by 7% over the past decade in the U.S., excluding the New York area (Li et al., 2019). The general business problem is that urban rail transit systems are experiencing a decrease in ridership in part due to the perception of increased crime and disorder. The specific business problem is that some urban rail transit leaders lack an effective strategy to reduce declining ridership associated with perceived disorder caused by fare evasion.

Purpose Statement

The purpose of this qualitative multiple case study was to explore strategies urban rail transit leaders use to reduce declining ridership associated with perceived disorder caused by fare evasion. The targeted population consisted of six urban rail transit leaders from two coastal transit agencies located in Eastern and Western United States (three leaders from each location). The implications for social change include the potential to reduce crime in the urban rail transit system. Transit leaders, through targeted enforcement on public transportation, may lower crime in the surrounding communities. With more urban transit riders, road congestion and vehicle emissions may be lowered in the region.

Nature of the Study

Research Method

For this study, I considered three research methods: qualitative, quantitative, and mixed methods. Multiple researchers believe qualitative research, using an interpretivist approach, is the best methodology for gaining an understanding of why a phenomenon occurs (Baskarada & Koronios, 2018). Alternatively, some quantitative researchers seek to identify the cause and effect or correlational relationships among variables (Saunders et al., 2015). Finally, the mixed methods researchers seek to bridge the gap between quantitative and qualitative research.

For this case study, the appropriate methodology was qualitative because qualitative researchers look to explore the *how* and the *why* of a phenomenon instead of examining a relationship through statistical hypotheses testing (Mohajan, 2018). A quantitative or mixed methods study would not have been appropriate for this case study because the purpose of this study was to explore rich and complex methods associated with crime reduction and not examine variables' characteristics or relationships (Saunders et al., 2015). I did not choose a quantitative or mixed methods study because I was not seeking to test a hypothesis about variables' characteristics or relationships but rather to identify and explore the strategies used to decrease declining ridership associated with perceived disorder caused by fare evasion.

Research Design

For this study, I considered three qualitative research designs: phenomenological, ethnographic, and case studies. Researchers use phenomenological designs to focus on

the personal meanings of the lived experience of participants (Saunders et al., 2015). Researchers use ethnographic designs to study the culture or social world of those observed (Saunders et al., 2015). Neither of these approaches provide the level of depth needed to gain insight on the strategies used by urban rail transit leaders to enforce fare evasion and improve customer satisfaction for increasing ridership.

The chosen design was a multiple case study with which I conducted interviews of transit leaders at two different transit agencies. Additionally, documents were collected to determine if the results of each transit agency's fare enforcement efforts resulted in lowering crime statistics and increasing ridership numbers. I chose the multiple case study over the single case study to enhance the possibility of direct or literal replication between the two agencies (Yin, 2018). This could show a generalized theme where targeted fare enforcement can lower the perception of disorder through increased police presence and enforcement.

Research Question

RQ: What strategies do urban rail transit leaders use to reduce declining ridership associated with perceived disorder caused by fare evasion?

Interview Questions

The warm-up interview question was as follows: What examples can you provide whereby crime and disorder, caused by fare evasion, has affected ridership? The remaining interview questions were the following:

1. How does your agency perform fare enforcement as a component of overall crime reduction?

2. How do you measure the effectiveness of your organization's fare evasion enforcement strategies?
3. How does your agency promote its fare enforcement to deter fare evasion and reduce the fear of crime and disorder for your customers?
4. How does your agency measure the effects of crime and disorder on overall customer satisfaction and ridership?
5. What, if any, type(s) of backlash has your agency endured based on enforcing fare evasion?
6. What examples of fare enforcement do you have that led to the closure of reported criminal offenses or the reduction in the fear of crime?
7. What, if any, mechanisms do your organization's strategies contain for customers or employees to report fare evasion or other public conduct ordinance violations?
8. What else can you share with me about your organization's strategies for reducing declining ridership associated with the perception of increased crime and disorder caused by fare evasion?

Conceptual Framework

The composite conceptual framework for my research was a combination of the Kano model and the Lean Six Sigma (LSS) strategy. Researchers, through the Kano model, which was created in 1984, can divide customer satisfaction into five categories (Kano et al., 1984). The categories range from necessary services that are taken for granted to niceties that attract customers. To realize customer satisfaction, businesses

must meet customers' basic needs before adding attractive features. The Kano model was later reduced to the three-factor theory when assessing customer satisfaction (Wu et al., 2019). The three factors that promote customer satisfaction are: (a) basic factors, (b) performance factors, and (c) exciting factors. Basic factors are those taken for granted by customers. Business leaders do not create satisfaction through basic factors, but if basic factors are missing, there is a negative impact on satisfaction. Performance factors can create satisfaction when present and create dissatisfaction when not present. Finally, exciting factors create satisfaction when present but do not create dissatisfaction when not present.

Wang et al. (2018) found that one reason that passengers choose not to ride the rail is they feel unsafe. The Kano model was expected to be applicable to my study because urban rail transit leaders must have a crime reduction strategy to lower crime, promote customer satisfaction, and increase the perception of passenger safety. Additionally, fare enforcement is a proactive strategy that can intercept criminals utilizing the rail system for criminal activity (Reddy et al., 2011).

LSS, created in 1986, is a strategy of improving business processes to reduce defects, or crimes, at a cost reduction (Rodgers et al., 2019). LSS is composed of a five-step process: define, measure, analyze, improve, and control, known as DMAIC (Rodgers et al., 2019). Combining LSS with the Kano model enabled me to understand strategies transit system leaders use to deliver customer satisfaction with limited resources.

Operational Definitions

CompStat: An abbreviation for compare statistics. CompStat is a management philosophy for police in which crime and enforcement statistics are used for deployment and evaluation (Maillard, 2018).

Fare evasion: The act of failing to pay the fare for riding public transportation (Rios et al., 2016).

Hot spot policing: Targeted patrolling and enforcement in high crime locations (Ariel & Partridge, 2017).

Payment-on-entry (POE): A type of urban rail system whereby riders must process their fare media through an automatic fare collection (AFC) machine to gain entry through a barrier such as a faregate or turnstile (Graham & Reynolds, 2016).

Pretextual stop: An investigatory detention for a violation with the intent to investigate a possible unrelated criminal offense (Cooper, 2018).

Proof-of-payment (POP): A type of urban rail system whereby riders must display their fare media upon demand by either law enforcement or agents of the transit system (Graham & Reynolds, 2016).

Safe passage: The placement of guardians along specific travel routes to ensure the safety of students travelling to and from school (McMillen et al., 2019).

Assumptions, Limitations, and Delimitations

According to Thomas (2017), assumptions are beliefs that can be taken for granted. Assumptions, although not verified, do not require justification by the researcher. I assumed the evidence obtained from the interviews of respondents was true.

I also assumed the targeted fare enforcement observed is representative of the transit leaders' permanent crime strategy. Finally, I assumed the documentation I reviewed was true and accurate.

Limitations are a lack of information that can hinder analysis (Angelo et al., 2016). Cabeza Pulles et al. (2017) advised limitations provide opportunities for future research. The limitation of this study was it was conducted through the lens of law enforcement leadership. Although acknowledged, other considerations such as loss of ridership through perceived police harassment were not considered. Additional factors all together outside the purview of law enforcement may cause declining public transit ridership. Finally, the study was limited by the limited number of respondents interviewed. Although qualitative interviews provide an in-depth perspective from respondents, the number of participants is reduced compared to quantitative research (Yin, 2018).

Delimitations provide case boundaries that provide the reader with a sense of the study being complete (Yin, 2018). There have to be clear boundaries to the scope of the study. I set the delimitations of my study to interviews with transit system leaders who have the authority to influence crime reduction strategy. Finally, the documents reviewed were limited to those referencing each agency's crime statistics and rail ridership.

Significance of the Study

Contribution to Business Practice

Safety is a basic feature urban rail leaders must provide their riders to build customer satisfaction (Van Lierop et al., 2018). Public transportation provides

opportunities for crimes because it attracts both criminals and victims (Sam & Abane, 2017). Urban rail transit leaders do not have the human resources to guard all station locations. To effectively lower crime, personnel must be deployed in high crime locations where most crimes occur (Bernasco et al., 2017). An effective fare enforcement strategy may allow officers to intercept and exclude criminals who fail to pay the fare (Clarke et al., 2010).

An effective fare enforcement strategy can save revenue by reducing declining ridership for urban rail transportation systems through reducing the fear of crime as well as social disorder (Delbosc & Currie, 2016a). Additionally, public ordinance violations such as fare evasion, panhandling, graffiti, and the public consumption of alcohol create the perception of social disorder (Wheeler, 2018). Hopefully, improving the perception of safety and social order in urban rail transit systems may positively increase revenue through expanded ridership.

Implications for Social Change

If rail transportation ridership is high, then vehicle congestion in the region lowers as well. In addition to lowering vehicle travel times due to traffic jams, using public transportation lowers air pollution due to vehicles emissions (Sun et al., 2019). A safe urban rail transportation system benefits those who choose to use alternate means of transportation. Many low-income individuals depend on urban rail systems as essential transportation. School absenteeism has been linked to a lack of safe passage on public transportation (Burdick-Will et al., 2019). Improving safe passage may also contribute to

positive social change by positively effecting the education of urban students by decreasing absenteeism due to a fear of crime and disorder on urban rail transit.

A Review of the Professional and Academic Literature

In my review of academic literature, I explored strategies urban rail leaders used to improve customer satisfaction and increase ridership by lowering the fear of disorder in their transit systems. Fleming and Rhodes (2018) studied evidence-based policing where scientific methodology and randomized controlled trials are used to measure the effectiveness of crime prevention strategies. Oliveira et al. (2019) suggested proactive, hot spot policing can be used to lower crime associated with public transportation. Few researchers have focused on using fare enforcement as a means to conduct hot spot policing in rail stations to lower customer's fear of crime and, in turn, increase ridership. Visually, the strategy would appear as shown in Figure 1.

Figure 1

Strategy for Increasing Ridership

Hot-spot fare enforcement → Decrease in crime and disorder → Increased customer satisfaction based on feelings of safety → Increased ridership on public transportation.

Literature Search Strategy

A literature review is a systematic search of academic literature (Vat et al., 2020). In this qualitative study, I addressed urban rail transit leaders' strategies for improving customer satisfaction and increasing ridership. The information for this literature review came from peer reviewed articles associated with theories regarding motivation and

satisfaction culminating in the Kano model. This is because safety and security are features organizations must provide customers before they can excite them with any other feature.

My literature review included a discussion of my conceptual frameworks, the Kano model and LSS. I reviewed scholarly articles from researchers who examined the aspects of customer satisfaction, process improvement, criminal justice theories as to why public transportation attracts crime, as well as law enforcement strategies for targeting crime. Specifically, I selected sources from an exhaustive review of literature using the Kano model, the Six Sigma strategy, the crime pattern theory, the rational choice theory, and the routine activities theory.

I reviewed several criminal mitigation strategies such as evidence-based policing, hot spot policing, and the broken windows method. Fare enforcement can be used as a proactive intervention measure as a component of these strategies, so crime is not only deterred but mitigated. Finally, I include several contrasting theories to dispute the positive effects of hot spot policing and fare enforcement. I conducted a literature search through Walden University's online library, accessing such databases as ProQuest, EBSCOhost, Scholar Works, Business Source Complete, ABI/Inform, Sage Journals, and Google Scholar. The search terms included *Kano model, three-factor theory, Six Sigma, public transportation, crime, fare enforcement, crime pattern theory, routine activities theory, rational choice theory,* and *hot spot policing.* This study included 269 references; 90% had a publication date of 2016-2021, and 96% were from peer-reviewed journals. I also used additional resources including textbooks and conference papers.

Kano Model

I used the Kano model to explore why the focus on a reduction in disorder is an important factor for urban rail transit leaders in overall customer satisfaction and increased ridership. Kano et al. (1984) found there were five categories regarding customer satisfaction. These include: (a) must-be factors, (b) one dimensional factors, (c) attractive factors, (d) indifferent factors, and (e) reverse factors. Must-be quality factors are taken for granted. Customers will not be satisfied if they are present, but they certainly will not be satisfied if they are not. One-dimensional qualities promote satisfaction if they are present and will lower satisfaction if they are not. Customer satisfaction is directly proportional to the functional performance of one-dimensional attributes (Materla et al., 2019). Business leaders promote satisfaction through attractive qualities that promote satisfaction when present but will not lower satisfaction when absent.

Kano et al. (1984) also found there are two other factors that do not have a positive effect on customer satisfaction. Indifference attributes do not affect customer satisfaction whether they are present or not (Singgih et al., 2018). Finally, those factors classified in the reverse category are performance conversely related attributes. Essentially, if present, reverse factors lead to customer dissatisfaction. An example of a reverse factor is a new product or service that performs as advertised; however, customers do not find value in it. Machin (2016) used the example of Spirit Airlines, which unapologetically offers an inexpensive alternative to traditional airline travel.

While some find Spirit's inexpensive nature appealing, other customers are dissatisfied by its stinginess.

The Kano model is important because it provides a framework for deciding what, according to the customer, are the factors organizational leaders should focus on. Chen et al. (2009) suggested organizations should follow the 80/20 rule where 80% of an organization's output should come from 20% of its input. Managers must focus their time and resources on factors that create the most customer satisfaction. Customer satisfaction, amongst other benefits, will lead to higher consumption, customer loyalty, a willingness to pay more, a good reputation, and positive word of mouth (Rotar & Kozar, 2017).

The Kano model was developed based on the principles of two older theories regarding motivation. The first theory is Maslow's needs theory which is considered one of the most influential theories for managers and organizational behaviorists (Acevedo, 2018). Maslow theorized human needs can be shaped in a pyramid with physiological and safety needs at the bottom and esteem and self-actualization at the top (Escardíbul & Afcha, 2017). Before a person can meet their higher-level needs, they must first meet their basic needs. Safety is considered a basic need just as it is considered a must-be by Kano.

According to Herzberg's two-factor theory, hygiene factors provide no satisfaction when present but provide dissatisfaction when not present (Hur, 2018). Hygiene factors are similar to Kano's must-be factors and include examples such as organizational arrangement supervision, work conditions, associations with peers, compensation, status, and job security (Khalil-Ur Rahman et al., 2017). Minhyung (2018)

simplified Herzberg's two-factor theory by stating feelings of achievement are motivators while the contextual or extrinsic features serve as hygiene factors.

The Kano model was later reduced to three leading factors regarding customer satisfaction (Xu, 2018). They include (a) basic factors, (b) excitement factors, and (c) performance factors. Basic factors can create dissatisfaction if they are not present but will not create satisfaction if they are present. Basic factors are considered the minimum requirements of a product for customers (Albayrak, 2019). Excitement factors create satisfaction when present but will not create dissatisfaction when not. They are generally unexpected by customers. Finally, performance factors are linear as well as bidirectional and based on their presence can either cause satisfaction or dissatisfaction.

Customer Satisfaction Regarding Public Transportation

There are a number of reasons why daily car travel is not desirable, including population density, limited and expensive parking, and fear of traffic accidents (De Vos et al., 2016). For many travelers, public transportation is a convenient and inexpensive option, but the quality of service must be maintained. Wang et al. (2020) described safety and security as a main factor in quality of service along with travel time and comfortability. Shen et al. (2016) also described safety and security as important components of overall customer satisfaction along with speediness and convenience.

Kim and Ulfarsson (2011) found fear of crime was a critical factor in rail patrons deciding whether they would continue being loyal rail transportation customers or seek an alternative mode of transportation. Vernez Moudon et al. (2018) also advised that transit-related crime does have an effect on the decision to use public transportation.

Specifically, the acts and perception of violence will cause the loss of ridership and revenue.

Leaders in public transportation must not only lower actual crime but overcome the fear of being victimized by crime due to the stigma of disorder occurring on public transportation (Masoumi & Fastenmeier, 2016). Statistically, perceived crime on public transportation is greater than actual crime (Badiora et al., 2015). Delbosc and Currie (2012) advised the fear of crime is a distinct concern from the actual crime rate, and it can be influenced by a person's age, gender, socioeconomic status, and ethnic background. In the United Kingdom, 10% of commuters would reconsider travelling on public transportation if their fears were addressed. When it comes to customer satisfaction, perception is reality, and public transit leaders should work to ease the fears of customers.

Cao and Cao (2017) found safety and security are basic features of customer satisfaction for all forms of public transportation. Agarwal and Mehrotra (2017) also surveyed railway customers in India and found both safety and security are significant factors in determining customer satisfaction. Yaya et al. (2015) expanded upon previous research and found increased customer satisfaction in public transportation is associated with a person's personal security and that of their belongings carried while traveling.

To increase customer satisfaction, public transportation leaders must overcome the perception of crime and disorder occurring in their systems to increase ridership (Litman, 2014). Having a safe and secure transit system would be considered a must-be factor for riders. Boisjoly (2018) advised external factors such as gas prices or the

increased use of ride hailing services do not have as much of an impact on ridership as internal service factors do. Although in many ways, public transportation is a more practical and inexpensive mode of travel for many customers, if they fear they will be accosted while travelling, they simply will choose another transportation option. This includes females fearing being sexually harassed by passengers (Vanier & D'Arbois de Jubainville, 2017).

Vijaya and Antony (2018) suggested the Kano model is most effective when it is used in conjunction with Six Sigma. ArunKumar and Dillibabu (2016) designed their blended Kano Lean Six Sigma (KLSS) model to eliminate wasteful processes that did not bring value to the customer. Later, da Silva et al. (2018) referenced ArunKumar and Dillibabu's (2018) combined model and advised KLSS would be best used by small and medium enterprises in supply chain innovation. KLSS would allow organizational leaders to minimize waste and increase customer satisfaction that was identified through the Kano model.

Lean Six Sigma

Bazrkar et al. (2017) advised that leaders of organizations can improve customer satisfaction and eliminate waste through fulfilling customers' needs, improving process design, and reducing rework. Vaidya (2018) suggested Six Sigma is a tool that can be used to strategically manage processes. Six Sigma is used to reduce the number of defects per million opportunities. When combined with Lean, which seeks to lower waste, Six Sigma will ensure products are produced more efficiently, or valued services are

provided cost effectively. Improved processes are the mainstay of LSS, which is a major component of total quality management (TQM).

Antony et al. (2018) explored the use of LSS by the Police Service of Scotland. They found LSS could be used in the public sector by service-related organizations such as police departments just as effectively as private, production-based companies. Additionally, Brown et al. (2018) studied the use of LSS by the civilian forensic division of the South Australian Police. Again, the use of LSS, especially the use of Lean to reduce wasteful practices and expenditures, proved efficient.

Six Sigma and TQM both were derived from a business approach called continuous improvement, which is also known as kaizen in Japan (Raja Sreedharan et al., 2018). Practitioners of continuous improvement seek to have a total organizational focus on incremental innovation. The change should be narrowly focused on cumulative meta-routines, when combined, create products or provide services (Shumpei & Mihail, 2018). Each improvement in the process should be clearly documented with clear, ostensive standard operating procedures (SOPs). Additionally, leadership will have to work to ensure there is total buy-in from all levels of the organization for the change to be successful. The resistance to the new procedure must be overcome to change the culture.

Leaders who subscribe to TQM seek total participation from all members of their organization with total focus on outputs which will sustain customer satisfaction (Raja Sreedharan et al., 2018). Some of the practices organizations employ to ensure TQM include process management, performance measures, statistical process control, and strategic planning (Rawan et al., 2018). The key to TQM is all employees working

together to improve the customer experience. Each product or experience purchased by a customer should be of a high quality without variation.

In the 1970s, the leaders at Motorola expanded upon the TQM model and created Six Sigma (Raja Sreedharan at al., 2018). The creators of Six Sigma sought to create a methodology to eliminate all substandard process outputs. The ideal would be to reduce the defects in a specific organizational process to a level equivalent to 3.4 defects per million outputs. Once the root cause of the problem was identified, practitioners in Six Sigma work to remove all actions that may bring about output variation outside the set benchmarks (Mishra & Rane, 2019). This is accomplished through five pillars: (a) define, (b) measure, (c) analyze, (d) improve and (e) control.

Lean is a process initiated by executives at Toyota Production Systems to eliminate waste (Raja Sreedharan at al., 2018). Lean uses value mapping to identify areas in the process chain where organizations can add value. Organizational leaders should focus their efforts on areas in the process that bring value to the customer by meeting key performance indicators. Organizational leaders, according to the principles of Lean, must eliminate any part of the process that would be considered waste. Examples of waste include process delays and the overproduction and storage of items not being sold to customers (Lauver et al., 2018).

LSS combines both the principles of Lean and Six Sigma to increase customer satisfaction (Raja Sreedharan at al., 2018). The principles of Lean can be used to eliminate waste while Six Sigma can be used to reduce defects (Chugani et al., 2017). Although each method has been found to be effective singularly, they are considered

most effective when they are used to complement each other. The tenets of LSS can be used by organizational leaders who want to focus their limited resources where they will be most beneficial for the customer and not waste them where they are not needed. This same principle is used in law enforcement to target criminal activity.

Crime Predictors

There are several theories as to why crime occurs in urban rail transit systems distinctly from the surrounding areas. These theories include the crime pattern theory, the rational choice theory, and the routine activities theory. These theories explain why public transportation attracts crime and why urban rail transit leaders should, through the lens of the Kano model and LSS, enact strategies to address these concerns.

Crime Pattern Theory

The crime pattern theory states that in addition to historical data, there are indicators of future criminal acts occurring at a specific location (Gerell, 2018). High crime locations, or hot spots, can be divided into two categories: crime generators and crime attractors (Barnum at al., 2017). Crime generators are locations that attract people, allowing both criminals and victims to become collocated. Crime attractors are locations that attract criminals by the nature of activities that are undertaken there.

Public transportation is considered a crime generator because it attracts both criminals and victims (Badiora et al., 2015). In some ways, public transportation serves as a mechanism to transport victims to perpetrators. Urban rail transportation systems can also be viewed as crime attractors because they provide discreet areas where criminals can conduct illegal activity (Bernasco et al., 2017). Zahnow and Corcoran (2019) found

bus stops serve as crime generators during peak ridership hours because they attract potential predators and prey. During off-peak hours, bus stops become crime attractors as nodes that attract criminals without oversight.

Higgins and Swartz (2018) studied, through the lens of the crime pattern theory, edgeways, which are a combination of pathways and edges. Edges are intermediate points between established residential or commercial space. Pathways are the means by which people travel to and from recognized nodes. Thus, edgeways are unguarded corridors used to travel between land uses making them crime attractors and crime generators. While public transportation intersections can be considered hot spots themselves, they are also influenced by the criminal activity of their surroundings (Stucky & Smith, 2017). This is due to people's everyday activities, such as riding public transportation, bringing suspects into contact with victims.

Rational Choice Theory

The rational choice theory is a microeconomic theory of human decision making (Bernasco et al., 2017). The rational choice theory suggests individuals will choose a course of action that best satisfies personal utility (Rivers III et al., 2017). Consequently, if vulnerable individuals are presented before the criminally inclined, the offender will conduct an analysis of the cost versus benefit of victimizing the target.

The rational choice theory suggests criminals make a rational choice to commit a crime if presented an opportunity with little risk of punishment. Neissl et al. (2019) suggested criminals weigh risk versus reward based on their personal or vicarious experiences related to punishment and punishment avoidance. There are skeptics of the

rational choice theory being used as a criminology-based theory because it assumes criminals use rational choice when making decisions to commit crime (Loughran, 2016). Admittedly, many criminals are thrill seekers and many crimes occur as a result of passion. Additionally, criminals, based on the heterogeneity of their backgrounds, have differing perceptions of risk versus reward (Ray, 2020). The high risk of being caught as well as a severe punishment may deter one individual but may not deter another.

Although there are criticisms regarding the use of the rational choice theory as a general theory of crime, Ray (2020) found there is general support regarding individuals being responsive to rational choice perceptions. Transit leaders can detail easily visible guardians at high crime locations to deter criminals. The rational choice theory is similar to the routine activities theory because their followers suggest for criminals to act, they must be presented an opportunity.

Routine Activity Theory

Researchers who subscribe to the routine activity theory suggest crimes occur when criminals and victims cross paths through legitimate, everyday activities (Pratt & Turanovic, 2016). Basically, crime is the result of the convergence of criminals and victims in the absence of an appropriate guardian. This would include the use of urban rail transit by victims and suspects without transit police or security to deter or prevent criminal acts from occurring. Hipp (2019) combined the crime pattern theory with the routine activity theory and created what he named, the general theory of spatial crime patterns. Crime can be predicted through the travel patterns of criminals, victims, and guardians.

Advocates of the routine activity theory suggest to alter or reduce an existing crime trend, the routines of criminals, victims, and guardians should be altered (de Melo et al., 2018). An example would include the staggered dismissal of rival schools, so they do not enter the rail system at the same time. Having increased uniformed presence during morning and evening rush hour as well as during special occasions such as sporting events would provide the needed guardianship.

Weisburd (2017) suggested the best way to counter the effects of the crime pattern theory, the rational choice theory, and the routine activity theory is to increase the presence of watchful guardians in targeted places to protect potential victims from offenders. Additionally, as Louderback and Roy (2018) found, when they studied the routine activity theory grouped with the social disorganization theory, an individual's propensity to commit a crime is based on the location they frequent as much as their background. Their study also suggested increasing the inter-disciplinary controls at macro-levels where there may be the presence of suitable targets and motivated offenders. Formal guardians are one aspect but combining police efforts with the community acts as a force multiplier.

Drawve (2017) suggested the police can use measures grounded in the routine activity theory to increase the likelihood of arresting motivated offenders. Collecting data on offenders, victims, and geo-spatial factors is important for police departments when making decisions as to where to deploy their limited resources. This is the foundation of evidence-based policing and specifically, hot spot policing.

Evidence-Based Policing

Andresen and Hodgkinson (2018) extended the premise of hot-spot policing by incorporating community-based policing. Detailing officers to a limited number of high crime micro-geographic locations, such as street corners and bus stops, with the purpose of interacting with the citizens who frequent those areas, will significantly lower crime. Using crime analysis and statistical data to drive this strategy is the basis for evidence-based policing. Huey et al. (2017) suggested the three objectives of evidence-based policing are to: (a) target crime problems, (b) test the prevention strategies, and (c) track the progress over time. The best manner to effectively conduct evidence-based policing in through the CompStat model.

In New York City during the 1990's, crime reached historic numbers, prompting Mayor Rudolph Giuliani to appoint Commissioner William Bratton (Pasha, 2019). Commissioner Bratton instituted the CompStat model which, much like TQM, utilizes a broad approach to improving the process of lowering crime. Vito et al. (2017) described the CompStat model as a managerial accountability system which could be applied to any organizational setting. The aim is for information related to crime statistics and efforts to be used to make strategic command decisions. Crime analysts play a central role in the creation of crime prevention plans (Piza & Feng, 2017). Police commanders should be able to defend their decisions based on analytical information. Imposed tactics should flow vertically from the executives down to operational managers as well as horizontally across bureaus.

Police commanders are responsible to ensure their crime plans, based on empirical data, is communicated down the chain of command to the officers patrolling the street. Telep and Somers (2019) suggested while many crime mitigation strategies are discussed at the executive level, they are not communicated with the troops. Visible crime trends viewed by officers are not communicated up the chain of command to supplement the crime statistics.

Hot Spot Policing

Barnum et al. (2017) suggested the majority of police services are needed in a few areas. One could use the 80/20 rule and apply it to police work to efficiently utilize limited resources where crime will be affected the most (Chen et al., 2009). Targeted enforcement would be considered an input and the lowering of crime would be considered an output. It is imperative to conduct enforcement where the input will have the most effect on the output of lowering crime. Those areas of enforcement which have the most effect on overall crime are referred to as hot spots.

Moore (2010) suggested high visibility, hot-spot policing should be utilized not to strictly eliminate crime but rather to reduce anti-social behavior. The premise for this strategy is disorderly conduct which may not necessarily lead to a criminal statistic is what actually drives fear and reduces ridership. Having officers serve as a deterrent for disorderly behavior may carry the most influence in increasing ridership.

Without additional crime mitigation strategies, hot-spot policing is merely an effort to deter crime in a certain location (Lazzati & Menichini, 2016). Criminal actors surveilling a location protected by police resources will, through the rational choice

theory, decide to commit crimes somewhere else. Economists view this behavior as a game theoretic approach which can cause the displacement of crime to locations where police resources are not allocated. To reduce crime and the fear of disorderly behavior to increase ridership, two proactive strategies should be utilized. One is the broken windows theory approach to crime acts and the other is the pretextual stop.

Broken Windows Theory

Gayet-viaud (2017) advised there is a link between what was described as incivilities and violent crime. Many low-level criminal acts such as graffiti painting, queue jumping, or street harassment can be viewed as gateway actions which can lead to violent crimes. As criminals gain experience, they may graduate from harassment and assault to robberies and weapons offenses. Additionally, if criminals see an area, such as a rail station or train car, unclean and full of disorder, they will view the area as lawless and commit additional unlawful acts (Ortigueira-Sánchez, 2017). By taking a zero tolerance stand against minor offenses, the police can bring back a sense of law and order.

For public transit agencies, a sense of law and order can ensure customer satisfaction. Li et al. (2019) correlated the increase in crime on public transportation and a decrease in ridership. Additionally, through the lens of the avoidance theory, Deniz (2019) suggested riders will avoid public transportation if there is a perception of high crime and disorder. This includes harassment of patrons by other riders, specifically sexual harassment of women by male passengers (Ball & Wesson, 2017). By reducing

this non-criminal act, police can instill a sense of safety for women utilizing the rail system. Urban rail transit leaders should lower crime and the fear of crime.

Spicer and Song (2017) also studied avoidance behavior and further recommended transit systems can lower the perception of crime by improving station design, lighting, and pedestrian flow. Improved station design as well as maintenance are major components in the broken windows theory and will improve customers' fear of crime and subsequently their customer satisfaction.

Wilson and Kelling (1982), through the broken windows theory, suggested visible signs of crime, anti-social behavior, and civil disorder creates an environment that invites more serious crime. Targeting low level crime such as fare evasion creates a sense of law and order which prevents the occurrence of more serious crimes (Oli, 2019). Ariel and Partridge (2017) used the New York City subway as an example of the positive effects of hot spot policing being used in combination with broken windows policing. Putting officers in high crime locations will act as a deterrent for fare evaders as well as criminals and it will also calm law-abiding riders who pay their fare.

Placing transit police officers at hot spot locations provide a sense of law and order in the rail system. This will, in turn, deter would-be criminals and lower the fears of passengers and increase their customer satisfaction. Additionally, using fare enforcement as a pretextual stop will allow transit leaders to rid their systems of those criminals who both evade the fare and prey upon law abiding passengers.

Pretextual Stops

Bijleveld (2007) suggested many of the same individuals who commit fare evasion are also responsible for anti-social, disorderly, and criminal behavior occurring within the transit environment. A strategy urban rail transit leaders can use to thwart criminal offenses and anti-social behavior from occurring within the transit system is using fare enforcement as a pretextual stop. A pretextual stop is an investigatory detention to investigate a possible unrelated criminal offense (Cooper, 2018). Pretextual stops are used by police officers to detain suspects for minor offenses for the purposes of yielding more serious violations through further investigation. This was the major premise behind the stop-and-frisk approach used by the NYPD in the 1990s.

The use of the pretextual stop is based on the 1968 Supreme Court decision, *Terry vs. Ohio* where it was decided the police can detain an individual when they have 'reasonable suspicion' the person has committed a crime, is presently in the process of committing a crime, or is about to commit a crime (MacDonald & Braga, 2019). The Terry stop can be used to further investigate whether an individual is illegally possessing a weapon. While detained based on 'reasonable suspicion' for the possession of a weapon, police officers can use that time to investigate other criminal offenses. Ridgeway (2017) argued, although the systematic use of stop-and-frisk is an effective tool used by law enforcement, it can be used as a means to racially profile minorities. There should be oversight on the manner in which stops are conducted.

Many theorists believe, in addition to conducting pretextual stops in a uniformed, high-visibility capacity, alternative tactical methods should also be deployed in high

crime areas. This includes the use of secret police allocations supplementing traditional deployments (Lazzati & Menichini, 2016). Massa and Fondevila (2019) studied what they described as crackdown policing where police not only police resources are concentrated in hot-spots but different tactics are used to mitigate the crime in those areas. These tactics include proactive plainclothes/undercover enforcement or surveillance, traffic stops with investigative searches, and stop and frisk detentions utilized for weapon recovery. Finally, pretextual stops and subsequent arrests can be used to attain confessions related to criminal investigations (Sekhon, 2017). Since many criminals fare evade and follow the same daily routines and patterns, fare enforcement can be used as an intelligence gathering practice.

Biased-Based Policing

Gizzi (2011) studied pre-textual traffic stops as a method for law enforcement officers to conduct drug interdiction. Basically, police officers can use probable cause gained from a traffic violation to further investigate a suspected drug trafficker. Officers can then make an arrest based on contraband located in plain-view, found based on reasonable-suspicion, a search incident-to-arrest of the driver, or even provided through the consent of the driver. Gizzi found while pretextual traffic stops are an effective tool for law enforcement, they can also be construed as an affront to civil liberties. Gaston and Brunson (2018) further stated black citizens are disproportionately targeted for involuntary stops and searchers. The authors added crime was only marginally reduced through hot spot policing.

Kamalu (2016) studied traffic stops in Nebraska and found minorities were stopped and arrested at a higher rate than white drivers. Additionally, Kramer and Remster (2018) found black civilians were more likely to have force used against them during an investigatory stop. Although the Supreme Court held, in *Whren vs. United States,* 'reasonable suspicion' of a traffic violation being committed by a driver is a legal basis for a stop, the same subjectivity applies to traffic stops as it does pedestrian stops (Kamlu, 2016).

The subjectivity in the amount of 'reasonable suspicion' needed to make a pedestrian or traffic stop opens police to scrutiny as to the true basis for a stop. Kamalu (2016) argues there is empirical data to suggest during pretextual traffic stops, 'reasonable suspicion' is not what initiates the traffic stop, detention, or arrest of minority drivers but rather it is racial profiling. Because of the stereotype the use of illegal drugs is prevalent amongst minorities; it is believed police officers target minorities during traffic stops to make drug arrests. Renauer (2018) suggested the concerns over profiling or enforcement bias are relevant to fare enforcement as much as they are in other forms of general enforcement.

Officers conducting fare enforcement use a tangible pretextual basis for a stop unlike many stop-and-frisk occurrences. Goel et al. (2016) argued many of the reasons NYPD officers used to make a stop were vague and violated the Fourth Amendment rights of citizens and unjustly targeted minorities. Some of the categories used for stops by NYPD officers included, suspicious objects possessed by those stopped, the sights and sounds of criminal activity, a suspicious bulge, a witness report, an ongoing investigation,

and a furtive movement by the subject stopped. Morrow and Shjarback (2019) suggested a stop-and-frisk based on a furtive movement, where it appears as though a suspect is going for a weapon, is highly subjective and many times may be based on implicit bias. If police officers want to be viewed as legitimate, they must make their stops based on legitimate reasons.

By lowering fear and generating a sense of law and order, police officers can instill a sense of civic pride in urban residents (Ren et al., 2019). This can only be done if the passengers view the police as legitimate. Kamalu and Onyeozili (2018) wrote it was not the aggressive policing strategies, such as stop and frisk, that lowered crime in New York City in the 1990's but rather an improving economy and the reduction in the use of crack cocaine. The authors suggested the zero-tolerance strategy unnecessarily introduced a large number of African Americans to the criminal justice system.

Blanks (2016) argued African Americans did not distrust police officers for being cited for violations they admittedly committed, such as speeding. Distrust and the subsequent loss of legitimacy was caused by detentions for ambiguous pretextual offenses and investigated for an unrelated crime. This type of policing is typically conducted in urban environments and is aimed at gaining deterrence through fear. Blanks (2016) suggests police officers can also gain compliance through cooperation based on legitimacy. Kamalu and Onveozili (2018) suggested, instead of using hot spot, or directed patrol, policing techniques along with zero tolerance enforcement, which is the foundation of the broken windows theory, it would be better to engage citizens through community policing.

Community Policing

Although there are numerous critics of targeting low level in urban environments because it disproportionately criminalizes the vulnerable as well as people of color, when combined with community policing, broken windows policing can be done with legitimacy. Oli (2019) argued, in addition to using broken windows policing, using informal social control, through community restraints can be an effective way to reduce uncivil behavior. Sparks (2018) added broken windows policing can be used as an intervention strategy to provide the homeless (non-destination riders) and mentally ill with the services they require. Because police officers have discretion in the manner in which they conduct enforcement, many times instead of arrests and fines, officers can provide social services.

Carter and Fox (2019) suggested community policing is not just a strategy aimed at engaging citizens to strengthen community ties, but a proactive crime prevention strategy. Maguire et al. (2019) echoed that by stating community policing has three characteristics: community partnerships, problem-solving (namely the reduction in the fear of crime), and organizational transformation (the building of legitimacy by the community). Proactive policing is viewed as a way to problem solve if police engage with the community. Cooperation with the community will allow the police to develop investigatory leads and general criminal intelligence (Carter et al., 2019).

Tulumello (2018) provided the efforts of the members of the Memphis, Tennessee Metropolitan Police Department as an example of community policing whereby they blended aggressive order maintenance and policing with a reintegrative mindset.

Problems with disorder are identified and handled in a co-decisional manner by both the police and the community. In other words, Metropolitan Police Department officers became agents of social outreach and transparently shared their crime statistics with the community, who in turn, assisted the police in achieving their mission of maintaining order. Urban rail transit agencies, by the nature of their enclosed physical design, provide a perfect opportunity for transit police and security personnel to engage with their riders.

Messaging

One disadvantage urban rail leaders have as it pertains to community policing is urban rail systems and urban rail police departments, many times, are not seen as being a part of the community in the same manner as local agencies are. Urban rail systems are viewed in business terms and not as part of the community. Allen et al. (2019) suggested many riders choose to fare evade due to perceptions in the level of on-time performance provided by the rail system. The authors advocated for the use of a communications campaign aimed at dissuading fare evasion. Urban rail transit leaders should publicize public transportation as a part of the community and fare payment goes to improving service.

In addition to communicating the reasons for fare payment, it is also important, as an aspect of community policing, for urban rail leaders to communicate their crime prevention strategies with the public as well (Nordfjærn, 2015). This may deter criminals and lower the fears of law-abiding riders. Litman (2014) reiterated passengers on urban rail transit systems have a relatively low chance of being victimized and if one considers traffic safety, it could be considered a safer option than driving. Urban rail transit leaders

must communicate through media personnel to promote transit travel as a safe alternative to driving to increase ridership and revenue.

Foot Patrols

Maguire et al. (2019) advocated the use of foot patrols as a way to engage the community and lessen the fear of crime and disorder. Although the use of police vehicles is an effective tool for reactive policing and can promote the sense of 'omnipresence,' it can also cause a sense the police are an occupying force without building community relations (Sytsma & Piza, 2018). Non-vehicular, informal community engagement is encouraged, especially with the disenfranchised.

Andresen and Hodgkinson (2018) promoted foot patrols through the lens of hot-spot policing. Not only does high visibility patrols in micro-geographic areas deter crime, but it also allows the community to engage with the police and build a sense of protection and trust. Mugari and Thabana (2018) found foot patrols detailed to hot spot locations not only lowered crime in specific areas but lowered the aggregate crime levels as well. This proves hot spot policing can be combined with community policing to target criminals and engage the community. For urban rail transit leaders, the best way to engage patrons and increase customer satisfaction while targeting criminals is through targeted fare enforcement at high crime stations. Officers can serve paying, law abiding external customers as well as other transit employees, while being in a position to intercept fare evading criminals.

Fare Enforcement

Worldwide, the fare evasion rate for public transportation is approximately 4.2% **(**Cools et al., 2018). The San Francisco Municipal Transit Agency leadership reported losses at about $19 million, annually (Lee & Papas, 2015). Also, in transit systems where personnel enforce fare evasion through fare inspectors, about 43% of inspections lead to an identified violation (Cools et al., 2018). Finally, the authors found although technology tools have a limited effect in lowering fare evasion, the most effective strategy to decrease fare evasion are human tools. The best manner to prevent fare evasion and retain revenue is increased enforcement.

Keuchel and Laurenz (2018) found increased fare enforcement did have an effect on fare evasion. The authors discovered as fare inspections increased, the number of bus riders in Munster, Germany without a ticket decreased. Delbosc & Currie (2016b) acknowledged not all fare evaders are the same. Some fare evaders are otherwise law-abiding riders who lack funds, some are from out of town who unintentionally fare evade, and some are habitual offenders who view fare evasion as a mathematical gamble. Delbosc & Currie (2016b) called for enforcement as well as outreach. They believe it may be appropriate to issue warnings for first time offenders and increased penalties for repeat offenders.

Fürst and Herold (2018) found increased fare enforcement by personnel is the best way to reduce fare evasion. The loss in revenue through fare evasion is significant and requires fare enforcement to reduce the number of free trips allowed. More importantly, fare enforcement will deter criminals by providing a sense of law and order in the urban

rail system. Additionally, the authors found increased fare enforcement by authority figures lower passengers' fears. This will, in turn, increase customer satisfaction, ridership, and ultimately revenue.

Types of Validation

The type of payment system urban rail transit agencies employ will determine the type of enforcement method and subsequently deployment strategy, transit leaders will deploy (Currie & Reynolds, 2016). POP systems tend to be open, without barricades at the entrances and exits to the station. Riders must show a police officer or fare inspector a ticket or proof they have paid their fare. The other types of urban rail transit leaders utilize a POE system where payment is made upon entry. POE systems can be further divided into systems where the passenger displays their ticket for validation prior to boarding or entering the system. This is similar to how one boards a bus and pays for their conveyance through a farebox and/or having the bus operator validate their payment. For many urban rail transit leaders, this type of validation would hinder the system's on-time performance (Graham & Reynolds, 2016).

To ensure fare payment without slowing down train operations, most urban rail transit leaders utilize an AFC system along with physical barriers (Reddy, 2011). A turnstile or fare gate will allow entry into the system and subsequently onto a train car as a rider pays their fare. While POP systems are more cost effective because they do not require the installation of physical barriers, they do rely on manual inspections of payment, many times on board trains (Correa et al., 2017).

Transit systems whose leaders use an AFC system with a physical barrier at every entry, can reduce the number of fare evaders entering the system (Reddy, 2011). This can be further decreased by target hardening via floor-to-ceiling gates and “high wheel” turnstiles. Although most physical barriers can be defeated, this allows for transit officers to make a detention based on observed. Although, POE systems allow for a more controlled environment as it pertains to fare enforcement, for some transit leaders, based on the expenses of associated with wayside vending machines and the operating environment, POE systems may not be practical (Lee & Papas, 2015). When conducting a fare enforcement strategy focused on reducing the fear of perceived disorder, leaders in POP and POE transit systems must use different strategies.

Proof of Payment

Currie and Reynolds (2016) suggested inspectors in POP systems only check for fare media in a small percentage of riders. There are two manners in which to achieve compliance, increase the risk of being caught and increase the punishment. Barabino et al. (2014) suggested increased spot checking is more of a deterrent than increasing the punishment.

Clarke et al. (2010) and Killias et al. (2009) both suggested increased spot checks are a better deterrent than increases in the penalty. Bijleveld (2007) also indicated increasing the punishment for violators to criminal prosecution over a civil fine was not a deterrent for violators. Additionally, Killias et al. (2009) argued spot checking should be conducted in hot spots during rush hour. Increased checks act as a deterrent for those

considering fare evading and also display for other riders a sense of order and fairness. This will help to gain public support for the rail system (Clarke et al., 2010).

POP systems, largely due to a small number of inspectors per riders, typically referred to as the honor system, lose more money through fare evasion than POE systems (Currie et al., 2016). This is especially true when riders take short rides, where the chances of being stopped are low (Barabino et al., 2014). Subsequently, per Yin et al. (2012), POP fare enforcement is typically used by transit systems leaders who do not lose enough revenue through fare evasion to make it economically advantageous to install AFC machines and physical barriers.

Game Theory in POP Systems

The deterrent against fare evading is the unpredictability of being asked to show one's proof of fare payment (Yin et al., 2012). Transit system personnel who utilize POP enforcement are forced to intercept fare evaders on trains, targeting high crime stations, or stationary micro-places becomes difficult. Some POP system leaders have used game theories and created computerized algorithms that can produce an output suggesting resource allocation. Alshawish et al. (2017) urged, the best manner to reduce criminal acts occurring, the potential for terroristic acts occurring, and the loss of revenue through fare evasion in a POP system, is the assertion 'spot checks' conducted by fare inspectors are random. The best way for POP transit leaders to conduct random checks is through a game theory approach.

The Los Angeles Sheriff's Department deployed at the Los Angeles Metro Rail system a program called TRUSTS (tactical randomization for urban security in transit

systems) to assist in deploying their limited resources (Yin et al., 2012). The strategy TRUSTS is founded on is the Stackelberg game theory. This economic approach is used by security at the Los Angeles International Airport, by the Transportation Security Administration, and by the Federal Air Marshals. The economic game, used in surveillance and counterterrorism can be converted into a fare enforcement strategy (Abd El-Monem, 2019).

The Stackelberg game theory approach is based on the idea the leader, who are governmental administrators, commit to a strategy and the violators are the followers (Abd El-Monem, 2019). Over time, the violators become the leaders and the officers become the followers. This strategy, essentially, can be expressed in a mathematical formula which considers locations and times (Yin, 2012). Transit leaders can, through the TRUSTS system, compute the best locations to deploy officers to stop those who failed to purchase a fare ticket.

Fare enforcement, especially in POP systems, can be viewed similarly to tax audits as a method to force compliance. Lederman (2019) suggested paying one's taxes can be considered "quasi-voluntary." This is comparable to paying one's fare because only a fraction of taxpayers or riders are inspected. Fare inspectors are assigned to rail lines based on ridership data where the most riders can be inspected on a certain day at a certain time (Yin, 2012). As the Stackelberg game theory suggested, fare inspectors should be cognizant of the changing patterns of fare evaders (Yolmeh & Baykal-Gürsoy, 2018). If inspections on a certain line yield little to no fare evasions, then the inspectors should find a new location to conduct inspections.

To prevent statistical discrimination, fare inspectors must check the fare of all riders on a train car (Buehler, 2017). While a fair practice, fare inspectors waste time checking the fare of all riders, including compliant riders. Additionally, POP enforcement does not target micro-places and intercept criminals prior to them entering the rail system. POE systems allow those who conduct fare enforcement to use reasonable suspicion to make a stop. Fare evaders and possible criminals can be targeted at micro-places in a pretextual manner because they were observed fare evading.

Payment on Entry

POE systems use physical barriers designed to keep patrons out until they pay their fare and are then allowed to pass through a turnstile or faregate. Muñoz (2020) wrote the uncomfortable design of turnstiles are intended to prevent fare evasion. This is because those who fare evade will either have to contort their body, jump over the hurdle, or otherwise perform a movement which will allow for easy detection by officers. The overt act committed by the potential fare evader provides reasonable suspicion for the officer to conduct a stop and check of their fare media. Transit leaders who use barriers essentially eliminate two of the three types of fare evaders described by Delbosc and Currie (2016b) in their study as to why people choose to fare evade.

Delbosc and Currie (2016b) advised there were three factors as to why individuals fare evade: (a) accidental, (b) unintentional, or (c) deliberate. Accidental fare evaders would have paid their fare but did choose to evade the fare because the self-validation machines were not working. Unintentional fare evaders hurried onto the train and neglected to validate their fare. Additionally, they could have been from out of town and

unfamiliar with the validation process. Finally, there are those who deliberately fare evaded and never intended to pay. POP systems tend to be open and not controlled or fully staffed (Currie & Delbosc, 2017). In addition to making it easier for those who fully intended to fare evade, open systems provide an excuse for accidental and unintentional fare evaders as well.

POE systems are controlled which allows for staff members to assist those who would otherwise pay their fare (Currie et al., 2017). This should eliminate those fare evaders who initially intend to pay their fare but change their mind when presented with convoluted payment systems. Additionally, POE systems, with physical barriers, should eliminate most accidental and unintentional fare evaders (Delbosc & Currie, 2016a). This is because fare evaders must make an overt and intentional act to enter the system without paying the fare. The only fare evaders who remain would be those who deliberately failed to pay the established fare.

Although there is a cost associated with the increased and overlapping degree of control closed systems use, the losses in fare revenue due to fare evasion are far less (Barabino et al., 2013). Additionally, there is less of a temptation to either imitate others who are observed fare evading which causes fare evasion rates to multiply. Ayal (2019) suggested increased levels of fare evasion cause a sense of mistrust and insecurity which increases passenger psychological discomfort and discourages them from using public transportation. Finally, Barabino et al. (2013) suggested fare evasion may be associated with the increased levels of violence on public transportation which also has negative economic repercussions.

Fare Evasion Affects Service

Sánchez-Martinez (2017) suggested increased fare enforcement in conjunction with AFC, allows for the proper collection of ridership statistics. Fare evasion can also be referred to as noninteractions. Noninteractions, where fare media is not processed, causes the ridership count to be underreported. This may cause crowding in the system which effects on-time performance and lowers customer satisfaction and revenue. Agarwal and Mehrotra (2017) found, in addition to safety and security being a major factor in customer satisfaction, other services such as the timing of trains as well as trip punctuality are important factors as well. These factors may be affected by underestimating the number of riders at a certain rail station or line and can contribute to increased crowding in some areas and a lowering of service in others.

Allen et al. (2019) advised such operational services such as crowdedness as well as the frequency and reliability of trains are factors in customer service. Crowdedness can also be looked at as a safety and security issue. Not only do crowded trains and platforms provide a frightening environment for some riders, it also allows for crimes to be committed in plain sight. Sánchez-Martinez (2017) suggested a decline in service and an increase in crowding, creates an excuse for other riders to fare evade. There becomes a cycle which allows the multiplication of fare evaders and exponentially lowers customer satisfaction.

Fare Enforcement Strategies

Dai (2018) conducted a lab experiment in public transportation systems and found, given an opportunity to increase their earnings by acting dishonestly, without the

risk of detection, many individuals will elect to act either partially or cheat fully to maximize their earnings. This experiment was conducted with otherwise law-abiding citizens who chose to commit, in their eyes, a trivial offense. Ayal et al. (2019) suggested it is not necessarily the physical barriers or even the fear of being penalized that causes riders to pay their fare. It was the discomfort of breaking social norms in the presence of 'watching eyes.' In fact, many times, station managers or other urban rail transit staff do not have the legal authority to stop those who fare evade. Nevertheless, there is a psychological deterrent to committing anti-social behavior in the presence of others.

As Dai et al. (2018) stated, a number of noncriminals may choose to fare evade in an open system without any barriers or oversight. The temptation to commit what many people view as a victimless crime and without an agent of the transit authority to ensure and assist with ticket purchase, may be too tempting to overcome. Leischnig and Woodside (2019) referred to this as an opportunity-oriented form of consumer misbehavior. The operational factors of the open system provide conditions favorable to fare evasion. Troncoso and de Grange (2017) suggested increased fare enforcement alone was not enough to lower fare evasion rates. Additionally, without a strategy, increasing enforcement may not be efficient or sustainable to lower fare evasion rates, the fear of crime, and falling ridership associated with fare evasion.

Dai et al. (2017) conducted a study regarding fare evasion in open, POP systems and found fare payment compliance rates improve during enforcement crackdowns. Once the crackdown ends, fare evasion rates rise again. This may be because POP are not naturally as deterrent-oriented as POE systems (Leischnig & Woodside, 2019). Also,

would those who were enticed to evade the fare in an open system have done so if it were not so inviting? If one decides to commit a fare evasion in the presence of personnel while also overcoming barriers, it adds evidence of the individual's criminality.

An individual who fare evades in a closed system may be more likely to engage in other criminal behavior. Levy et al. (2018) suggested there is an association between the number of fare evaders with the number of serious crimes committed. There should be a capable guardian preventing fare evasion or other criminal acts. Many criminals specifically target victims who ride public transportation (Ozascilar, 2019). Lowering crime and disorder while increasing customer satisfaction through fare enforcement in a closed system may prove effective because criminals can be targeted by guardians.

Fare evasion in a closed system is more noticeable by other patrons when fare evaders defeat a barrier (Muñoz, 2020). As opposed to POP systems where fare evasion occurs surreptitiously, fare evasion in a controlled, barrier system, occurs in the view of other riders. Some riders have varying methods evade paying their fare in POE systems by passing through barriers on the fare of others. These acts are still more noticeable than fare evasion in POP systems. This may create a sense of inequality and disorder by those who pay their fare which lowers customer satisfaction (Reddy, 2011). Fare evasion is less noticeable by other patrons in a POP system whereby many times it is first noticed when the fare inspector requests proof of payment.

Guarda et al. (2016) adds the number of citations issued are less in controlled systems and the amount of money spent on inspectors is less as well. This is due to the increased deterrence for potential fare evaders based on the perceived impediments.

Additionally, fare enforcement in controlled systems can be focused on micro-spaces where violators must funnel through.

Significance to Positive Social Change

By lowering crime on urban rail transit systems, transit leaders can reduce urban congestion, provide an inexpensive transportation alternative for those in need, and reduce overall regional crime. Araz et al. (2018) suggested, in addition to DUI enforcement, one strategy to lower drug and alcohol related traffic fatalities is the investment in public transportation. Not only will this lower the number of intoxicated drivers on the roadways, but it will lower the number of total vehicles on the roadway. This will lower the exposure to intoxicated drivers, especially in already crowded, urban environments. Wen and Bai (2017) reiterated an investment in public transportation will contribute to less road congestion which contribute to all urban stakeholders, even those who choose to drive. This, in turn, will also reduce the amount of CO_2 emissions produced in a region.

Hosseinabad and Moraga (2017), in their study of air pollution in Mexico City, Mexico, found the reduction of cars driving should be a major factor in any air pollution strategy. The authors contend, while there may be substantial costs to building a mass transit system, in twenty years there will an evident reduction. Newman et al. (2016) described, through the theory of urban fabrics, how urban planners should design cities which are less dependent on vehicles. This is done by increasing public transportation and designing the built environment around it whereby residents can travel to places they need through a combination of bus, train, and walking.

Public Transportation as a Necessity

In urban environments, the poor and elderly rely on public transportation to access many of the necessity's others take for granted. For instance, Baek (2016) found access to public transportation produces a negative effect towards food insecurity. Not only does public transportation, whether it be bus or train, provide an inexpensive alternative to driving and parking in urban cities, it also allows those who cannot operate a vehicle, a means to transport groceries. Ríos et al. (2018) in their study of the lessons learned in the aftermath of Hurricane María, was the effect on Puerto Rico's public transportation infrastructure. The researchers found, due to the damage to public transportation, low income and those dependent on mass transit were unable to obtain such emergency services as medical assistance.

Lowering Regional Crime

In addition to lowering crime in the urban rail transit system, through fare enforcement, transit leaders can lower crime in the system's surrounding area. Di (2017) proposed there is a correlation between the location of mass transit systems and crime in the surrounding neighborhood. Admittedly, urban rail transit systems are built in urban environments. The location of rail systems may not be the only cause of the increased street crime.

Phillips and Sandler (2015) found urban rail transit systems provide criminals a method to distribute criminal activity, usually a short distance of a couple of stations, from its location of origin. Ridgeway and MacDonald (2017) offered, although an increase in rail transit crime may not add to a region's overall crime, it can increase crime

in localized surrounding areas. Strategies used to lower crime and the perception of crime in the urban rail system can be used to lower street-level crime as well. This can be especially important when it comes to the lowering the fear of crime as it pertains to lowering the fear of crime by vulnerable populations.

Targeting Sexual Predators

One contribution to social change transit leaders, through increased fare enforcement in urban rail transit environments, can make is the reduction of sexual harassment and assault of females. Public transportation attracts both unsuspecting female patrons as well as sexual deviants to a relatively confined space (Natarajan et al., 2017). Female passengers on public transportation are more susceptible than males to sexual harassment, indecent exposure, as well as sexual assault. In London, 11% of female passengers reported being either sexually harassed or sexually assaulted (Ball & Wesson, 2017). Additionally, the researchers found only a fraction of women who are victimized actually report the occurrence. This may be due to the victims being afraid of retaliation, not feeling their complaint will be taken seriously, or fearing they will be blamed themselves.

Many times, sexual harassment, depending on the severity, is not a criminal offense but rather a form of incivility, consequently there is not enough of a deterrent to prevent it from occurring. As in other forms of incivilities, sexual harassment creates a fear of crime amongst passengers and reduces the human dignity of the victim (Gautam, 2019). Moore (2010) suggested placing units in hot spots can not only lower crime but can also lower harassment. Additionally, pretextual fare enforcement can assist in ridding

both the transit system of sexual deviants as well as the surrounding city as a whole. This is because although predators may be attracted to mass transit, they commit offenses on the street and behind closed doors as well.

Improving Safe Passage

In many urban environments, children use public transportation, whether it be bus transportation, rail transportation, or a combination of both, to travel to and from school (Wiebe et al., 2014). Urban rail transit replaces school buses for many inner-city students. Additionally, many of these students do not have the option to drive or be driven to school. The fear of being victimized on public transportation may lead to increased absenteeism (Burdick-Will et al., 2019). Additionally, fear of violence can be detrimental to the mental health of adolescents (Chen, 2017). Extended exposure to violence can cause depression in children and young adults.

School bullying can affect its victims by causing mental health implications to include health-risk behavior, criminality, and even suicide (Chandler, 2018). In urban environments, many times public transportation is used by juvenile students instead of school buses (Tigre, 2017). Unfortunately, public transportation becomes a venue for the continuation of school-based abuse. Parents are forced to either transport their children to and from school or place their children in an alternative school (Voisin et al., 2016). Unfortunately, these options are difficult for many urban parents who may not have the income or time necessary.

Hot-spot policing along student safe passages, in conjunction with fare enforcement can maintain order and lower assaults (Haberman, 2016). If done in

cooperation with the school system as well as students' parents, hot-spot policing could be an extension of the school resource officer (SRO) program. McMillen et al. (2019) advised 63% of violent crime occurs on weekdays with 19% occurring between 3 p.m. and 7 p.m. The authors offered Chicago, school-based crime has been reduced by about 20% based on the partnership between the Chicago Police Department and Chicago Public Schools. Placing police and civilian guardians along travel hot-spots has provided the proper oversight for travelling youths.

Hoeben and Weerman (2014) advised adolescents travelling in groups of peers in a semi-public location, such as public transportation, without guardianship, allows a situational condition which allows for adolescent offending. Placing transit officers and/or security personnel at fare barriers placed at the entrances to stations or checking fare as students enter train cars, provides the necessary oversight of students after school. If conducted through informal means, enforcement could include a conversation with the student, the parents, and the school administration. More importantly, the interaction with students would allow officers to key on aggressive behavior or children who display signs of fear in public transportation (Cozma et al., 2015).

Negative Effects of Fare Enforcement

Although there may be several social benefits for urban rail transit leaders lowering the fear of crime and disorder through fare enforcement; there may be some negative social consequences as well. Jashnani et al. (2017) conducted a study in New York City related to what they referred to as order maintenance policing. This method is comparable to the broken windows theory whereupon police target misdemeanor and

public conduct offenses, such as fare evasion, to lower overall crime. The study found persons of color were disproportionately stopped for such minor offenses as fare evasion and given records which labeled them unfairly as criminals. Kamaluet et al. (2018) referred to the targeting of minor offenses to lower violent crime as “zero tolerance policing” which was born out of New York City in the 1990’s. Fare evasion was a staple of “zero tolerance” policing as was the targeting of other petit crimes such as graffiti and prostitution.

Kamalu et al. (2018) suggested, as with other forms of broken windows policing, targeting fare evasion has the unintended consequence of targeting minorities and subjecting them to not only pretextual stops but harassment and the loss of their due process rights. Stolper and Jones (2017) found in the first three months of 2017, the NYPD arrested 4,600 people for fare evasion, with 90% of them being black and Hispanic. Being convicted of a criminal offense limited person of color from becoming employed, being admitted to college, or remaining in the country for those who were unnaturalized.

In addition to targeting those of color, fare enforcement may also disproportionately penalize the underprivileged (Perrotta, 2017). Many urban residents depend on urban rail transportation because it is more affordable than driving. It is the only viable travel option they have and many times it is still unaffordable. Fare evasion may not be a method for someone to increase their wealth but rather a means for survival. New York City spends $50 million annually to arrest, prosecute, or fine, low-income

individuals (Stolper & Jones, 2017). Many argue this money could be better spent improving the social conditions faced by urban riders.

Transition

In Section 1, I reviewed how I used a qualitative multiple case study to explore strategies for fare enforcement to reduce declining ridership associated with fear of crime. First, I discussed the background of the problem, problem statement, purpose statement, and nature of the study. I then described the Kano model and LSS which are the conceptual frameworks for this study. Next, I listed the operational definitions as well as the assumptions, limitations, and delimitations of the study. Thereafter, I described the significance of the study to both business practice and positive social change. Finally, I reviewed the literature related to customer satisfaction, the broken windows theory, the crime pattern theory, and the routine activities theory.

In Section 2, I discussed the role of the researcher, the participants, the population and sampling, data collection and organization techniques, as well as the reliability and validity of my study. Additionally, I restated the purpose of the study, the research method, and the research design. Finally, in Section 3, I present my findings, the application to professional practice, and implications for social change. I conclude with recommendations for action and future research, as well as my reflections and conclusion to my case study.

Section 2: The Project

In Section 2, I present strategies urban rail transit leaders used to reduce declining ridership associated with perceived disorder caused by fare evasion. I also present information that supports the research design of the study, and I discuss the role of the researcher, ethical considerations, and participant recruitment and demographics. Further, I discuss my strategies for data collection and data analysis. I then outline the steps I used to ensure validity and reliability.

Purpose Statement

The purpose of this qualitative multiple case study was to explore strategies urban rail transit leaders use to reduce declining ridership associated with perceived disorder caused by fare evasion. The targeted population consisted of six urban rail transit leaders from two coastal transit agencies located in Eastern and Western United States (three leaders from each location). The implications for social change include the potential to reduce crime in the urban rail transit system. Transit leaders, through targeted enforcement on public transportation, may also lower crime in the surrounding communities. With more urban transit riders, road congestion and vehicle emissions may be lowered in the region.

Role of the Researcher

The role of a researcher in a qualitative study is to explore a phenomenon through an unobtrusive lens while collecting unbiased and value-free data (Jain, 2017). My role as the researcher was to serve as the primary data collection instrument for conducting my

interviews and document review. While performing the role of the researcher, I adhered to Walden University's guidelines regarding data collection.

As a sworn member of a transit police department, I have professional experience in conducting fare enforcement and strategically planning fare enforcement in conjunction with hot spot policing. My career familiarity has been specifically with POE enforcement whereby fare evaders are observed attempting to defeat an AFC system used in conjunction with a barrier. Although I come from a law enforcement background, it was pertinent I remained impartial. Price (2018) acknowledges all humans have biases but advises researchers not to allow their predispositions to guide their research. I reduced my personal biases to allow for research validity.

As a command level official with a transit police department, I have met and collaborated with executive and command level leaders at other urban rail transit systems throughout the country. Some of the participants were indirectly known to me through the transit industry. I do not have any direct business related to or personal relationships with any of the participants.

Cumyn et al. (2019) advised the responsibility for ethical research conduct rests largely with the researcher. I followed the ethical standards mandated by Walden University's Institutional Review Board (IRB). The *Belmont Report* provided a guide for the ethical use of human subjects in a research study (Adashi et al., 2018). I followed all requirements issued in the *Belmont Report* to protect the dignity, privacy, and freedom of my participants (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979).

It is important researchers maintain a critical distance from participants to ensure the research is not complicated due to nonobjective interactions (Sacks, 2018). My data collection through interviews and document review was conducted objectively. Although the prospective participants lead efforts to reduce crime and disorder in urban rail transit systems as I do, I conducted my research through an objective lens. To ensure consistency, I adhered to the interview protocol throughout the data collection process (Appendix).

I mitigated my personal bias though multiple methods, including following an interview protocol (see Appendix), member checking, and by following the IRB protocols. I conducted member checking and obtained data saturation through triangulation. Data saturation is the marker of qualitative rigor and is identified as the point whereby new data will not contribute to the study (Varpio et al., 2017). In addition to saturation through triangulation, Reid et al. (2020) added that member checking enhances analytical rigor.

Varpio et al. (2017) stated member checking involves the researcher presenting their data transcripts as well as the data interpretations to all or some of the participants. This participant involvement adds credibility to the findings by allowing the respondents to validate their words to ensure what they meant was captured. Secondly, it allows the participants to check the analysis of their provided data to ensure the interpretation of the researcher is valid.

While conducting this study, I followed the ethical standards mandated by Walden University's IRB. I conducted this study by interviewing transit police leaders

who perform fare enforcement on both the tactical and strategic level. Additionally, I observed transit leaders discussing strategic crime strategies involving fare enforcement in departmental CompStat meetings as well as the execution of those strategies. Finally, I reviewed documentation, including SOPs and any crime and/or enforcement data with a nexus to fare evasion.

Hamilton et al. (2017) advised that interview protocols provide a narrative-based structure to qualitative interviews. When conducting in-depth, open ended interviews, it is important to have a script to guide the researcher in the interview process. Yeong et al. (2018) added interview protocols ensure alignment between research questions and interview questions and provide for an inquiry-based conversation. An interview protocol improved the reliability and validity of the case study.

Participants

Participants in a qualitative case study should be able to contribute to the overall problem statement. The participants for this study consisted of three leaders from two different coastal transit agencies, for a total of six participants. Two leaders from each agency were of the command or strategic level with 5 years of experience successfully developing crime initiatives with a fare enforcement component. Additionally, one leader from each agency was from a midlevel or tactical level with 5 years of experience in successfully administering fare enforcement measures.

The reason for using command and tactical level leaders as participants was to explore how fare enforcement is incorporated in a transit agency's overall crime and disorder reduction plan as well as how the plan is executed. I interviewed participants

who develop crime reduction strategies involving fare enforcement and observe managers enforcing the strategy as part of an overall effort to decrease disorder and increase ridership. I was unable to conduct in-person observations of fare enforcement due to COVID-19 related restrictions, so I virtually interviewed managers who have conducted fare enforcement operations. I gained access to participants by contacting each agencies' chief or executive leader, explaining my study and requesting the participation of their police or security command personnel. After receiving contact information, I emailed each participant and followed up with a phone call asking for permission to meet them at their departmental headquarters.

To establish a working relationship with participants, I contacted them multiple times via email and telephone prior to the interview. I explained the process thoroughly to put them at ease. I was unable to travel due to COVID-19, so I conducted interviews virtually and forwent the two observations for two additional virtual interviews regarding the tactics of fare enforcement operations as part of an overall effort to decrease disorder and increase ridership to ensure data saturation. I conducted my interviews virtually or telephonically and audio recorded them.

I used a total of six participants (three from each organization) for my study because I believed this would provide me with data saturation. Two participants from each agency were from the command level and originators of overall crime strategies using fare enforcement as a component. The third participant executed the tactics created in the enforcement strategy. This allowed me to explore fare enforcement as it is

conducted and incorporated in an overall crime prevention strategy aimed at increasing ridership and revenue.

Research Method and Design

Research Method

When conducting a case study, researchers can choose between a qualitative, quantitative, or mixed methods research method (Creamer, 2018). Researchers who use a qualitative method are seeking to explore a problem through an open-ended inquiry with a small sample (Svensson et al., 2020). Researchers using a quantitative method are seeking to test a hypothesis through a closed-ended inquiry with a large sample (Hughes et al., 2016). Researchers who use a mixed methods approach seek to integrate both qualitative and quantitative aspects to their study to capitalize on their complementary strengths and differences (Plano Clark, 2017). Kaur (2016) suggested quantitative research is based on numbers, which supports objectivity and helps to prevent biased results. Some problems, or their recommendations, are subjective and may require a qualitative approach. I did not conduct a quantitative or mixed method study because I was not interested in testing a hypothesis or measuring the correlation between fare enforcement and urban rail transit related crime.

I used the qualitative method to explore how urban rail transit leaders use fare enforcement to lower crime and disorder as a means of increasing ridership. This was accomplished through asking semistructured questions of transit leaders who conduct fare enforcement, the review of transit agency documents related to fare enforcement, and the observance of fare enforcement in person. Through the collection of qualitative data, I

gained insight into how transit leaders use fare enforcement as a component of an overall crime reduction strategy.

Research Design

The three research designs I considered for my study included: (a) phenomenological, (b) ethnographic, and (c) case study. A phenomenological study is used to understand a problem through the experiences of the participants (Rose, 2019). I did not select a phenomenological study because I am not interested in exploring the experiences or perceptions of the participants who are affected by the problem. An ethnographic study is used by researchers seeking to gain a deeper understanding of the lived experiences of individuals within a group (Kassan, 2020). I did not seek to use an ethnographic study because I am not interested in the lived experiences of transit leaders.

The design I chose to use for my research was a multiple case study. A case study is an in-depth exploration of a bounded system (a case) over time (Debiak et al., 2019). A multiple case involves conducting studies of multiple cases (Tremblay et al., 2019). I chose a multiple case study because I am interested in exploring how the leadership of two different transit agencies use fare enforcement to lower crime and disorder to increase ridership.

I reached data saturation by using the triangulation method of data collection which included conducting interviews of urban transit leaders, making observations of fare enforcement strategies being conducted, and reviewing documents related to fare enforcement and crime statistics. I knew I reached data saturation when I did not collect any new data from my participants. This included the themes I gathered during the

interviews of transit police commanders and the information obtained in my document review.

Population and Sampling

Malterud et al. (2016) suggested the degree to which participants contribute to the study could be considered information power. The number of participants needed in a qualitative study to reach saturation is based on the information power of each participant. Accordingly, the more informational power each interviewed transit leader had, the less I needed to interview.

Purposeful sampling is a qualitative technique where nonprobability samples are purposefully selected by the researcher (Naderifar et al., 2017). The researcher defines a target group of participants who will be best used to explore a specific problem **(**Bungay et al., 2016). I used purposeful sampling for my case study because I investigated fare enforcement strategies used to lower crime and disorder through the lens of those who have led those efforts. Transit leaders who have incorporated fare enforcement operations as a means to conduct hot spot policing, offer a credible perspective as it pertains to successes and failures. Suri (2011) described the 16 types of purposeful sampling strategies. The type of purposeful sampling I chose was random purposeful sampling. Before I conducted my study, I had no knowledge of each agency's fare enforcement strategy.

In homogeneous, purposeful sampling, participants have a similar trait or characteristic (Mohammadi et al., 2019). Although I preferred my participants to have led a fare enforcement effort aimed at lowering crime and disorder to increase ridership, I

used participants who use varying fare enforcement strategies. Shooshtari et al. (2018) advised heterogeneous sampling is used to obtain different experiences and points of view. I was interested in the effectiveness of both POP and POE fare enforcement strategies and where each is more successful.

Yin (2018) described multiple case studies where a number of single cases are embedded within a larger multiple case study. The cases have a theoretical replication whereby the problem or phenomenon are similar, but the conditions of the study are different. Vélez et al. (2020) advised embedded units provide multiple case studies a comparative nature and allowed for robust results. I was interested in understanding the perspectives from both POP and POE based fare enforcement within the larger context of using fare enforcement as a keystone of hot-spot policing. Fare enforcement can be used, albeit differently, in both an open and closed urban rail transit system.

I used a total of six participants for my study. This is because six participants provided enough data for saturation. I ensured data saturation by continuing to collect data until no new themes emerge through coding. Once participants began to repeat the same information without nothing new being gleaned, I was satisfied I reached data saturation.

Ethical Research

Widmer et al. (2020) declared informed consent is the cornerstone of ethical research and is essential to protect the rights and wellbeing of participants. There is a need for the consideration of informed consent and confidentiality given their varied

management in existing studies (Burles & Bally, 2018). I addressed ethical considerations throughout my research to provide protections for participants.

Wilbanks and Rothstein (2020) suggested a participant's informed consent should be documented in a written statement from the researcher to the participant whereby an interaction is created. Consent should be provided so the participant can understand the research being conducted and make a recordable choice to participate in the study. This not only protects the rights of the participant, but also the researcher as well (Knepp, 2018). Additionally, Federal regulations require participants be provided with information on a study's purpose, procedures, risks and benefits, confidentiality protections, as well as procedures for withdrawal (Bromley et al., 2020).

Lurea (2018) advised there is an ethical obligation to protect individuals taking part in research and researchers need to reassure participants data collected will be treated confidentially. Additionally, Lancaster (2017) advised if participants feel protected, they will more confidently provide rich and detailed information. Protecting participants is not only the ethically right thing to do, if researchers are able to provide participants with an assurance, it will allow for a more open semistructured interview.

Informed consent allows respondents to provide their willingness to be exposed to risk of participation (Binik, 2018). I ensured there was an informed consent form provided to each participant as well as the procedures for withdrawing from the study. The form was attached to the emailed invitation and an emailed acceptance was obtained by having participants specifically respond, via email, by stating, "I consent." This was done prior to conducting interviews or making observations. Additionally, I made the

participants aware their participation was voluntary, and they could withdraw at any time without consequences by notifying me via email or in person.

I protected the confidentiality of participants by guarding the personal data of participants and the transit agencies from where they were employed. Allen and Wiles (2016) suggested the use of pseudonyms is a way to protect the identity of research participants. I renamed the participants who participated in my study as well as the organizations they work for. All data gathered in my study will be maintained in a secured area for five years to protect the confidentiality of the participants. Finally, I offered a $20 gift card for participating in the study. None of the participants felt comfortable accepting the gift card, so I sent them a ceremonial badge set as a nominal gift.

Data Collection Instruments

Rahman et al. (2018) claimed the quality of a study's findings is dependent on the quality of the instruments used. Additionally, the instruments are used to validate the results obtained. As I conducted a qualitative study, and I am considered the primary data collection instrument. Sezer and Abay (2019) explained in qualitative studies, the semistructured interview is considered a data collection instrument.

Audio recording of interviews will allow researchers to pay close attention to the developing conversation (Marchand et al., 2020). The researcher is then allowed to ask follow-up questions as needed without worrying whether the participants words were captured. I recorded and transcribed my interviews. Ullrich-French et al. (2017) described internal consistency in qualitative research as a means of strengthening collected

evidence. Finally, I collected documents related to each transit agency's crime statistics and fare enforcement from their public websites and request any documentation, including SOPs related to fare enforcement as well as any crime and/or enforcement data with a nexus to fare evasion during the interviews.

Cheng et al. (2019) advised member checking is used by researchers to enhance credibility. Rahman et al. (2019) reiterated that allowing interviews to be cross-checked by participants as a way of member checking will allow for an increased validity of the results. Phillips et al (2020) added methodological triangulation is another method researchers can use to increase the validity and reliability of their study. I allowed the participants in my study to member check their interviews to ensure I captured what they stated. I scheduled follow-up interviews with the participants and shared the transcripts of the interviews as well as my interpretations. This added validity and reliability to my collected data.

Data Collection Technique

A researcher conducting a study using a methodological triangulation aims to use multiple data collection techniques within a given method (Krumwiede et al., 2019). Methodological triangulation allows for the comparison of observational and interview data to prevent the possibility of missing details (Markodimitraki et al., 2017). Triangulation allows for the confirmation or complementation of the results. To ensure methodological triangulation, I conducted semistructured interviews of two, command level transit leaders, per transit agency, who led fare enforcement strategic efforts. I also interviewed one mid-level manager who oversaw the fare enforcement efforts. Finally, I

reviewed documentation, including SOPs related to fare enforcement and any crime and/or enforcement data with a nexus to fare evasion during the interviews.

The first data collection technique I used was the semistructured interview. In semistructured interviews, participants are asked general issue-oriented questions, but the participant is allowed to guide the flow of the conversation (Mohammadi et al., 2019). To assist with the flow, researchers who conduct semistructured interviews, use open-ended questions (Smit et al., 2020). I started my interview process by contacting executive leaders through urban rail transit leaders I have met through previous industry collaborations such as peer reviews or joint criminal investigations.

To facilitate the semistructured interviews, I requested from each transit agency's executive leadership the names of two command level participants who can be interviewed. I then sent the potential participants an introductory email requesting their informed consent to participate in the study and, if they are willing, arrange a time to meet virtually or over the phone. Next, I requested from the command staff participants, one mid-level manager to interview regarding their fare enforcement tactics. Finally, I reviewed documentation, including SOPs related to fare enforcement and crime and/or enforcement data with a nexus to fare evasion during the interviews. All data was coded, including those from the strategic level interviews, tactical level interviews, and collected documents.

I planned to conduct semistructured interviews face-to-face rather than video interviews or over the telephone. Technology has allowed for the increased use of video chat platforms which reduces the need to travel for interviews, and subsequently saves

time and money (Reynolds et al., 2018). Although virtual meetings may be more convenient, I believe face-to face, in-person, interviews offer an environment which allows for open discussion. Unfortunately, the COVID-19 global pandemic prevented me from conducting in-person interviews due to travel restrictions. Upon completion, I emailed my interpretations of the interviews to the participants for their review and followed up with an interview.

Garnelo et al. (2020) suggested the advantage of conducting interviews is it provides an ethnographic approach to the triangulation of data sources. The authors add interviews to provide insight from the perspective of professionals working in the field being studied. Ogrin et al. (2020) further advised the advantage to conducting semistructured interviews is they provide insight into the experiences of participants which can then be thematically analyzed. Davies et al. (2020) countered the disadvantage of conducting non-randomized studies such as qualitative semistructured interviews is the inherent bias of participants. Because my participants were all police or fare enforcement personnel, there is a risk of bias towards excessive enforcement.

Data Organization Technique

Kwan (2018) advised one concern for study participants is the inappropriate sharing of collected data by researchers. I collected data from semistructured interviews with urban rail transit leaders. The interviews were audio recorded and my interpretations were typed on the interview protocol template. Finally, I reviewed documentation related to crime and fare enforcement from the two studied transit agencies. I stored hard copies

of data as well as electronic data on an external hard drive in a locked filing cabinet and will do so for a period of 5 years after which all data will be destroyed.

Data Analysis

The data for my study were analyzed using methodological triangulation. Triangulation allows data gathered through one design to be compared and contrasted through another design (Nwanna-Nzewunwa et al., 2019). Thus, methodological triangulation facilitates validation by evaluating data sourced through different data collection approaches (Idris et al., 2019). This is especially useful in qualitative studies where the sample size is smaller than quantitative studies.

I triangulated semistructured interviews conducted with transit leaders who lead fare enforcement efforts and with semistructured interviews of mid-level managers who oversee fare enforcement efforts, as well as with the data collected from SOPs related to fare enforcement and crime and/or enforcement data with a nexus to fare evasion during the interviews. I ensured triangulation in the analysis process by identifying themes emerging from conducting semistructured interviews and comparing them with the evidence obtained through document review. I used NVivo software to collect, organize, and analyze themes emerging from the semistructured interviews, and collected fare enforcement SOPs which described each agency's strategy and protocols, using Yin's (2018) five-step process described below. The collected SOPs were used to confirm and strengthen the themes which emerged from the semistructured interviews. More specifically, a review of the SOPs ensured the strategies and tactics described by the participants were based on formalized practice.

Skaggs and Graybeal (2018) described a ride-along as a form of experimental learning. This approach allowed me to analyze how fare enforcement can be utilized as a component of a larger crime reduction strategy aimed at lowering disorder in urban rail transit systems. Rios et al. (2020) used a ride-along as a way of collecting data in the form of field notes. Due to COVID protocols, I was forced to conduct interviews with those who oversee fare enforcement rather than participating in a ride-along. I compared the themes that emerged in my field notes to those collected through document review as and the semistructured interviews.

One technique to examine the data gathered in one's case study is thematic analysis (Spillane et al., 2019). Thematic analysis represents a systematic framework for the identification of patterns across collected data. Spillane et al. (2019) further explained a researcher should first familiarize themselves with their collected data and then create initial codes. Idris et al. (2019) described codes as labels or keywords writers use to assign meaning to descriptive information gathered in a study. Once I created codes by reviewing the notes from my interviews and document review, I then began to define themes.

Yin (2018) suggested using a strategy for identifying patterns where the researcher analyses their data from the ground up. Vincens et al. (2020) added reviewing data through a grounded model provides an interpretative understanding of the participants' experience. Since I was interested in learning strategies with external validity from the experiences of those urban rail transit leaders who have led fare enforcement strategies, I filtered the data looking for codes or patterns.

Yin (2018) provided a five-step process can be used to analyze collected data. The steps consist of (a) compiling, (b) disassembling, (c) reassembling, (d) interpreting, and (e) generalize conclusions to analyze the data accurately. Additionally, I conducted a cross-case syntheses to identify patterns identified across the two agencies. Also, reviewing each agencies SOPs and crime and/or enforcement data with a nexus to fare evasion can assist me in analyzing the data collected in the semistructured interviews, and observations. Finally, I compared the key themes identified through data collection to the theories discussed in my literature review, including the conceptual frameworks of the Kano model and Six Sigma.

Reliability and Validity

Reliability

Reliability refers to the ability for other researchers to consistently replicate an earlier case design and achieve the same findings (Saunders et al., 2016). Simply put, Rudeck et al. (2020) stated reliability is achieved when collected data has reproducibility. Case study results, to be considered reliable, should be consistent and stable (Dehghan-nayeri, 2019).

To achieve reliability in my case study, I needed to ensure my data was dependable. The first step to achieving dependability is to create an interview protocol. Castillo-Montoya (2016) suggested using an interview protocol will improve the quality of the data obtained through interviews. Another manner to achieve reliability is through data saturation (Campwala et al., 2020). Data saturation is the most commonly employed concept for estimating sample size in qualitative research and is achieved (Guest et al.,

2020). It is important in determining rigor and is the point where the theoretical model being developed stabilizes.

Data saturation is the point at which new information contributes little or no new information to address the research question (Guest et al., 2020). Sincar et al. (2020) added one way reliability is achieved is through a structured analysis. In addition to data saturation, there is also a need to code themes discovered in the data (Guest et al., 2020). I used member checking to achieve reliable and consistent results.

Validity

O'Leary et al. (2017) advised validation is the process of gathering relevant and appropriate evidence. Yin (2018) further states the quality of a case study design is related to its level of validity. Yin further describes multiple tests for ensuring overall validity. These tests include (a) construct validity, (b) internal validity, and (c) external validity.

The first test to ensure a case study is valid, is to ensure it has construct validity. A researcher ensures they have construct validity by ensuring they have operational measures for the concept they are seeking to explore (Yin, 2018). In other words, the study measures what it is supposed to measure (Howe et al., 2020). Yin (2018) explains the threat to the validity of a case study is when inferences are made. If a researcher makes an incorrect assumption related to an outcome being the result of a causal occurrence. Saunders et al. (2016) described a number of threats to internal validity in qualitative research. These threats are related to respondents' perceptions.

To ensure participant validity, researchers should conduct member checking by sending collected data back to participants to review (Saunders et al, 2016). This includes presenting the participants with transcripts of their interviews as well as the interpretations of the researcher (Thomas, 2017). Cheng et al. (2019) added member checking not only adds to the credibility of a study but also contributes to theoretical saturation. Thomas (2017) suggested member checking is a key factor in establishing credibility and trustworthiness in a study.

Trustworthiness or credibility is critical in establishing rigor in qualitative research (DeCino & Waalkes, 2019). Shufutinsky (2020) suggested, because qualitative data is rooted in interpretivism, data and outcomes can vary depending on researchers and participants. To ensure credibility, I used triangulation, member checking, and data saturation. Data saturation was reached when identified themes were repeated and no new themes emerged.

Ensuring credibility helps researchers establish believability while maintaining the complexity of the phenomenon (DeCino et al., 2019). Further, credible interpretations of data are established through systematic conceptual and analytical discipline. This ensures study conclusions are plausible, unbiased, defensible, and trustworthy (Shufutinsky, 2020).

To enhance the confirmability of a study, it is important for researchers to discuss their personal biases and expectations before the data is analyzed (Bejar at al., 2019). This will ensure the accounts which the researcher reports are actually shaped by the participants. Additionally, Sourinejad et al. (2020) suggested different forms of data

collection will enhance confirmability. I used triangulation to ensure I collected data from multiple perspectives via multiple methods. Finally, Keys (2019) advised the use of member checking will increase the accuracy of collected data.

Soffer-Elnekave et al. (2020) advised transferability is an important goal of qualitative research. It allows research findings to reflect widespread phenomena. Transferability is a type of external validity whereupon the findings of a study can be transferred to another context (Moon et al., 2016). Basically, the results of one case study involving a limited number of participants can be applicable to theory, practice, and future research. Unlike quantitative research, the results of a qualitative study do not provide future researchers with statistical generalizability (Connelly, 2016). Instead, I conducted my study through rich analysis and trustworthiness will resonate with future researchers.

Transition and Summary

In Section 2, I restated the purpose of my qualitative multiple case study and introduced my role as the researcher. I advised of the participants I plan to use before I discussed my chosen research method (qualitative) and design (multiple case study). I reviewed my plan to use of purposeful sampling involving six urban rail transit leaders. I declared, as an ethical researcher, I would receive informed from my participants and protect their confidentiality.

I stated, as a researcher, I am the primary data collection instrument. Additionally, I used methodological triangulation to include semistructured interviews and document review. I organized and analyzed the data collected, ensuring it was reliable and valid.

In Section 3, I will present my findings, as well as the application for professional practice and the implications for social change. I will then make recommendations for action and further research. Finally, I will reflect on my experience with the doctoral process.

Section 3

Introduction

The purpose of this qualitative multiple case study was to explore strategies urban rail transit leaders use to reduce declining ridership associated with perceived disorder caused by fare evasion. I analyzed and collected data from interviews with two command level transit leaders as well as two tactical level managers from two urban rail transit agencies. I also reviewed crime data related to each agency as well as any general orders or SOPs related to fare enforcement.

From the collected evidence, three themes emerged. They included (a) hot spot policing, (b), focus on education over enforcement, and (c) investigative follow-up. Hot spot policing consists of using data to deploy highly visible transit police officers and fare inspectors to high crime areas. To remain legitimate in the eyes of the public, those deployed resources should exercise discretion and conduct noncriminal contact with citizens. Social media can assist transit leaders in building rapport with the community. Finally, fare enforcement should include investigative follow-up including stopping identified suspects, serving warrants, and seizing contraband.

Presentation of the Findings

The overarching research question was:

RQ: What strategies do urban rail transit leaders use to reduce declining ridership associated with perceived disorder caused by fare evasion?

I collected data from semistructured virtual interviews with four command-level leaders and two midlevel managers from two coastal transit agencies. The participants

were identified as either east coast (EC) or west coast (WC) and number. The first and second interviews were conducted with command-levels officials from each agency, while the third interview was conducted with a mid-level manager. Additionally, I collected fare enforcement SOPs and crime data from each transit agency.

The participants described strategies to reduce declining ridership associated with perceived disorder caused by fare evasion. The findings revealed three themes transit leaders used to reduce declining ridership associated with perceived disorder caused by fare evasion. These themes were (a) hot spot policing, (b), focus on education over enforcement, (c) investigative follow-up.

Carson and Wellman (2018) described problem-oriented policing as a crime intervention approach where police explore alternative solutions to specific crime problems. Through problem-oriented policing, police scan, analyze, respond, and assess (SARA model) a problem. This encompasses hot spot policing, which is data based. Problem-oriented policing also requires the community to develop collective efficacy and a sense of ownership over crime and disorder. Porter and Graycar (2016) discussed the crime-triangle, a major premise with problem-oriented policing. If police can focus on not only offenders, but also targets (victims), as well as places, they can eliminate crime. In other words, just as my study found, police must use a holistic approach to crime reduction.

Theme 1: Targeted Enforcement

Targeted fare enforcement in high crime areas was identified as the first theme to help to reduce declining ridership associated with perceived disorder caused by fare

evasion. Table 1 displays the three subthemes (high visibility, data-based deployment, and using a layered approach amongst sworn and civilian employees) discussed by participants and accounted for in Theme 1. There were eight potential sources that provided evidence to develop the themes and subthemes in my study. They included four strategic-level semistructured interviews, two tactical-level semistructured interviews, and one fare enforcement SOP from each agency.

Table 1

Theme 1: Targeted Enforcement

	Nodes	Sources	References
1	High visibility	7	21
2	Data based	7	20
3	Layered approach	7	16
Total		21	57

According to Johnson and Patterson (2021), fare enforcement is a strategy used by transit leaders as a means of order maintenance policing. Chronopoulos (2020), when explaining broken windows policing, described two components: social order enforcement and high visibility. When combined, these factors create a sense of security for urban rail transit riders. All the participants described a layered approach where sworn officers worked in conjunction with civilian employees. The civilian employees included fare inspectors, transit ambassadors, and security guards. Although each have differing degrees of legal authority, they all wear a uniform and provide a sense of security.

High Visibility

Van Houten et al. (2017) proved that high visibility enforcement has a positive effect on social norming with limited actual enforcement. The participants in my study supported this finding by suggesting high visibility is a major component of their fare enforcement strategy. Even when plainclothes enforcement is employed, high visibility officers assist as a diversion. Koslicki and Willits (2018) suggested that high visibility is a major component of community policing where officers work foot patrol, are assigned specific beats, and interact with the community. The participants in my study described these characteristics as a part of their fare enforcement programs. Fare enforcement, by its nature, forces interaction between fare enforcement agents and the public.

High visibility was referenced 21 times in my study. All the participants in my study found that high visibility was an important aspect of a successful fare enforcement strategy. EC #2 believed when officers are highly visible conducting fare enforcement, there is an observable increase in ticket purchases because the perceived risk of getting caught increases. EC #2's belief is the basis for the rational choice theory and is evidence that high visibility does lower fare evasion (Rivers III et al., 2017). EC #3 added high visibility fare enforcement also has a positive effect on other crimes, such as thefts of passengers, in addition to fare evasion. WC #1 suggested highly visible personnel are a major component of overall crime reduction and provides a sense of security for law abiding passengers. WC #1 added that high visibility ensures future compliance because fare paying patrons will say, "I did not buy this [ticket] in vain."

Urban rail transit leaders must lower the fear of crime in their system and lower actual crime (Masoumi & Fastenmeier, 2016). EC #1 discussed how the public appreciates the uniformed presence in the system. WC #1 added highly visible personnel help to create a sense of security for passengers. This attitude is based on WC's fare enforcement SOP, which states when passengers see fare inspectors on train cars, it improves "the perception of safety." EC #2 provided that high visibility provides a sense of comfort and allows passengers to easily contact officers and share information.

EC #2 and EC #3 suggested that due to limited resources, there is a need to enhance the visibility of uniformed personnel. During fare sweeps, EC deploy marked vehicles to the designated station with their light bars illuminated. WC #2 commented the use of command presence is especially effective during high commuter hours. This is based on WC's fare enforcement SOP, which describes how fare inspectors should conduct systematic fare enforcement during peak ridership hours to allow for the most visibility. These verbal and written testimonies suggest that high visibility deployment should be data based.

Data Based

Koper et al. (2021) offered that half of a jurisdiction's crime occurs in 5% of its street blocks and if police leaders can lower crime by 20% at hot spots, they can lower overall crime by 10%. If transit leaders use data-based, hot spot deployment, they can more efficiently lower total crime and disorder in their rail system. The participants in my study all indicated to varying degrees that their deployment was based on statistical data. Some participants indicated they deployed their resources based on criminal hot spots

while others advised they deployed personnel based on fare evasion rates. Benbouzid (2019) discussed how law enforcement leaders are using quantitative metrics as a management tool to effectively measure, manage, and control the activities of officers.

Whether the participants in my study referred to their fare enforcement as intelligence-led policing or the CompStat model, they all described a quantitative method to fare enforcement. Fare enforcement being data-based was referenced 20 times. Analyzing data to make deployment decisions is the basis of hot spot policing (Barnum et al., 2017). The efficient use of resources to eliminate waste and improve customer satisfaction is also a major premise in LSS (Bazrkar et al., 2017). Participants in my study agreed, at a minimum, fare enforcement is most successful during peak ridership hours which parallels rush hour on highways. By deploying during these hours, uniformed members are most visible and able to make the most inspections.

WC's SOPs prescribe differing percentages of fare inspector coverage based on peak hours, nonpeak hours, and weekends. WC #1 added the highest ridership hours and locations are captured by automated people counters. To ensure fare inspectors are deployed correctly, their logs and summons records are cross referenced with automated people counter data. WC #1 and WC #2 both stated customer surveys capture where future deployment should occur. WC #2 stated, "We have identified hot spots and will take enforcement action and shift resources around to those hot spots."

EC #2 and EC #3, who are sworn police officials, described departmental CompStat meetings where crime mapping is used to target locations with the highest Part I, or serious, crimes. EC #2 stated they track crime "by the day, by the week, by the

month … Part I versus Part II crimes, where they are happening, when they are happening, the location, the weather … we get really granular in this." EC #2 added that using fare enforcement as a form of broken windows policing is an advantage transit police departments have. EC #1, who manages the force of fare inspectors, advised he supports requests from his law enforcement partners to conduct fare enforcement at locations they identify as hot spots.

Layered Approach

Nalla and Gurinskaya (2020) discussed the emerging trend of private security working in conjunction with police to exercise social control. In my study, all the participants discussed how the use of uniformed personnel, whether they were fare inspectors/transit ambassadors, security guards, or police officers, were able to provide a level of deterrence and security. Multiple uniforms working together created a force multiplier which provided the high visibility. Saarikkomäki (2018) discussed how security agents have different standards related to legal authority. The SOP's I reviewed in my study clearly expressed the legal limitations of civilian personnel. In my semistructured interviews, both the sworn police officers and civilian fare inspectors understood their role. The fare inspectors would be the front-line employees; however, law enforcement would provide back up along with the legal arrest authority, if needed.

The use of a layered approach to fare enforcement was referenced 16 times. EC uses their own agency's transit police department while WC relies on the services of the surrounding jurisdictions. Either way, as EC #3 advised, the fare inspectors do the "heavy lifting." WC has contracted security guards who can check fare but not issue citations

while EC also has contracted security guards; however, they monitor parking lots only. WC #3 advised that law enforcement contacts are mostly "reactive" as they intervene on behalf of the fare inspectors in a situation that has already escalated. EC #1 advised both the police officers and fare inspectors communicate their deployment, so all personnel are in sync.

EC #1 advised having both civilian and sworn officers on the trains provided a "smoke and mirrors" effect where there was a perception there was more officers deployed than there were. EC #1 added this unified approach provides a comforting visual for passengers in hot spot locations. Fare inspectors, and security guards, working in conjunction with law enforcement provides added legitimacy to the civilian members. WC #3 described the fare inspectors as the "eyes and ears" for the law enforcement officers. This strategy frees law enforcement to respond to criminal events but shadow the fare inspectors. Additionally, the police are not seen as overbearing because they are not conducting most of the fare enforcement.

Theme 2: Education Over Enforcement

My second theme was education over enforcement. The findings I identified in my study suggested when transit agencies focus on educating their ridership over zero tolerance enforcement will improve declining ridership associated with perceived disorder caused by fare evasion. Table 2 displays the three subthemes (use of discretion, outreach programs, and the use of social media) discussed by participants and accounted for in theme 2. Theme 2 was also developed through four strategic-level semistructured

interviews, two tactical-level semistructured interviews, and one fare enforcement SOP from each agency.

Table 2

Theme 2: Education over Enforcement

	Nodes	Sources	References
1	Use of discretion	7	19
2	Outreach programs	7	16
3	Use of social media	6	14
Total		20	49

Participants in my study expressed how seeking compliancy with their fare payment procedures was their agency's primary goal. Participants discussed how their leadership attempt to teach the public through signage, education campaigns, and social media, how and why they should properly process their fare. The participants all expressed how making arrests for fare evasion was their last resort.

Use of Discretion

One subtheme that emerged through my semistructured interviews and review of each agency's SOP's, was their rejection of the zero-tolerance approach. Although discretionary behavior is most often attributed to individual officers, it is filtered through the context of their agency of employment (Nowacki & Spencer, 2019). Buvik (2016) offered, depending on a number of variables, such as the seriousness of the offense or behavior of the offender, many conduct under-enforcements of the law. One variable

Buvik (2016) discussed was the system variable which includes the culture of the department.

The use of discretion was referenced 19 times in my study. Participants from both agencies discussed using some degree of officer discretion. As EC #1 described it, “We do not want to issue summonses. Our main revenue comes from purchasing their tickets and validating them.” WC # 3 echoed that by stating his personnel, “Try to gain compliance through the education side versus the enforcement side.” The EC participants described most of their fare evaders were issued civil citations as opposed to criminal summonses. WC participants spoke of issuing mostly warnings for first time offenders. WC #1 provided, “The majority of our citations these days are frequent violators.”

Both agencies have varying degrees of enforcement options provided in their SOPs. The first option for all participants is to assist the passenger with how to properly process their fare. WC stated his agency has, “transitioned away from a zero-tolerance fare enforcement protocol to a customer service first approach.” EC SOPs advise “the fare inspector must use proper discretion to select the best enforcement option to address the specific circumstance.” Both agencies use warnings when dealing with juveniles. EC #3 referred to them as “curbside adjustments” where juveniles were stopped, a parent was called to the scene, and a documented discussion occurred.

Outreach Programs

Community policing is a strategy which takes a holistic approach to solving a crime problem (Rukus et al., 2018). In community policing, there is community engagement, and both the citizens and police work together to keep the community safe.

Community engagement starts with police departments being transparent in their efforts. Once 'buy in' is obtained from the community, the police gain legitimacy and their enforcement actions are accepted. Historically, transit agencies have had an uphill climb to obtain engagement because they operate in the vicinity of a community but not as a part of the community.

In my study, conducting outreach in conjunction with fare enforcement was referenced 16 times. EC #1 described his agencies efforts to ensure the public understands the fare processing guidelines through public address (PA) announcements or signage. They advise, "make sure before boarding a train, you purchased a validated ticket because fare enforcement officers will be checking for those tickets." EC #2 added that before conducting a fare sweep, they knock on doors in the neighborhood surrounding the affected stations and advise the residences of what will occur. "By doing that we get buy-in from the residents who live around that mass transit facility. We develop relationships with some of our neighbors."

Smith (2019) suggested it is one of the duties of police leadership to address vulnerability in all its forms. Varano et al. (2019) suggested, at times, police should use a treatment-based approach instead of an enforcement-based approach. The theme of partnering with social services and assisting the vulnerable was a theme in my interviews. Both transit agencies provided social services for the homeless and juveniles. Fare inspectors and transit police officers can use fare inspections as a tool to contact and provide social services to those in need.

The first outreach program both transit agencies in my study have is allowing vulnerable populations to ride free. WC #3 stated, “We have a multitude of different passes. There are daily passes, disabled passes, student passes, monthly passes, a wide range.” In fact, WC has an SOP which identifies frequent fare evaders and use a “case management approach to help them obtain fare and access to other resources in order to help them get where they need to go.” Additionally, both agencies have outreach officers or teams whose mission is to liaise between the disadvantaged and social services.

Use of Social Media

One major theme that emerged in my interviews was the use of social media as a way the agencies could connect with the community. The use of social media can be used by police leaders to disseminate information, gather intelligence, and engage with the community (Kudla & Parnaby, 2018). Both agencies used their respective social media platforms to communicate with their patrons regarding how to use fare collection systems, their fare enforcement efforts, and exchange information related to crime and disorder in their systems. The use of social media fosters a symbiotic relationship between citizens and police (Boateng & Chenane, 2020). Social media can also increase citizens’ perceptions of police effectiveness and legitimacy. The use of social media will allow urban transit leaders to create ‘buy in’ for their fare enforcement efforts through transparency.

The use of social media to exchange information between transit leadership and transit patrons was referenced 14 times. EC #1 advised that his agency is transparent regarding what their hot spot fare enforcement areas are. On their app, “Captains and

Lieutenants are putting information out there and they are also putting information out there and they are also putting out that fare enforcement is in these areas and that they are being checked for tickets." WC #1 also described the use of social media to promote fare enforcement but also to have interactive communication with riders. If there is an issue, a passenger can, "take a snippet [digital phot] and put it on the app and that goes to our SOCC and that is monitored twenty-four seven. EC #2 described one of the biggest investigative benefits of using social media when he stated, "Even at the command level, I can go on [app] and put a BOLO out." The exchange of suspect images allows these individuals to be subsequently identified.

Theme 3: Investigative Follow-Up

My third theme was investigative follow-up. The findings I identified in my study suggested that investigative follow-up of focused fare enforcement can help to reduce declining ridership associated with perceived disorder caused by fare evasion. Table 3 displays the three subthemes (Be On the Look Out (BOLO) identification, warrant service, and contraband seizure) discussed by participants and accounted for through theme 3. Theme 3 was developed through four strategic-level semistructured interviews and two tactical-level semistructured interviews. The SOPs did not provide any supporting evidence for this theme.

Table 3

Theme 3: Investigative Follow-Up

	Nodes	Sources	References
1	BOLO Identification	5	9
2	Warrant Service	4	8
3	Contraband Seizure	5	11
Total		14	28

Be on the Look Out Identification

Davis et al. (2018) discussed the emerging trend in law enforcement where certain practitioners can identify faces in crowds for criminal investigations. While conducting my study, through the semistructured interviews, I found each agency used this strategy to investigate criminal activity in an around their transit systems. The use of closed-circuit video cameras in conjunction with smartphone technology, allows both transit police officers and fare inspectors to send and receive images of criminal suspects. Because fare inspectors are on the front lines conducting fare enforcement, they can locate suspected criminals and notify their law enforcement counterparts. Law enforcement has been criticized for the use of vague descriptions to stop minorities (Henning, 2020). Transit agencies can leverage technology to make stops based on digital images.

The stopping of suspects identified in BOLOs by those conducting fare enforcement was referenced nine times. EC #1 discussed how fare inspectors, while in the rail system conducting fare enforcement, stop suspects from BOLOs. “They will call it in and we have had many instances where we have helped our detective unit pick up a lot of these BOLOs.” WC #1 added,

> “I’d say our percentage rate is successful with BOLOs, especially known transit riders. If we get a BOLO at eight o’clock in the morning, that person will be picked up by 5pm in the night because one of the inspectors has come across that person.”

WC #3 described a system where BOLOs and known offenders are categorized into a rolling top ten. By incorporating pictured BOLOs with crime data, transit personnel can target hot spots where these offenders frequent.

The exchanging of digital images with the public, it is a reactive investigative technique that the community can support. This is especially true if the suspect committed a violent or perverse act. EC #2 put it best, saying,

> “We have had such an outpouring of information come from the public when it comes from these sexual deviants. We'll have people call “Hey, that guy, that guy that's that he got a BOLO for yeah, I'm on train,” whatever. “He is in the head end. I see him, know he's wearing” and they describe them.…We will have officers; we get there and board the train, and we take them into custody.”

Warrant Service

One aspect of law enforcement is the service of arrest warrants issued by the court (Bonkiewicz, 2016). I found, through conducting my study, fare inspectors for both agencies, served numerous arrest warrants by running violators through criminal databases. Logan (2019) described law enforcement's practice of conducting criminal queries of those stopped for violations as database policing. All participants in my study advised to issue a warning or citation, fare inspectors must confirm the identity of the violator. As they confirm the identity of violators, the participants provided they have the legal right to run a 'warrant check.'

The service of warrants by those conducting fare enforcement was referenced eight times. WC #2 described how fare enforcement allows fare inspectors to contact wanted subjects. "The opportunity to check to see if they have fare to inspect has been key to a reduction in crime and keeping crime low because we are able to identify these individuals and if they are on probation or parole if they have warrants then our transit ambassadors will call our officers and will take appropriate action." EC #1 echoed that statement.

> "If you do not have the proper ticketing, we pull you off and you are issued a summon, your information is running, and if you have warrants, you will be locked up on the spot and we go from there. So that is one of our biggest avenues right there."

Open warrants are not the only pieces of information held in law enforcement databases which can assist transit personnel. WC #2 added, "That contact possibly identifies him

and possibly see if they are on probation or parole as engaging them in conversations has been huge."

Contraband Seizure

The concept of using detentions for minor offenses to probe individuals stopped is a controversial tactic that can lead to police profiling those, they want detained and then claim the minor infraction was the purpose of the stop. Rushin and Edwards (2021) described how some police officers use stops for minor traffic infractions in the hopes of locating contraband. Liu and Nir (2021) further described such unconstitutional transgressions as racial profiling, deceptive probable cause embellishment, and overreaching searches that undermine police legitimacy.

Using pretext to develop reasonable suspicion is a major component of 'stop and frisk' and is condemned as being Unconstitutional (Huq, 2017). The participants in my study were able to distinguish their enforcement strategy from 'stop and frisk.' In both transit agencies, the majority of stops for fare enforcement are conducted by unarmed, civilian, fare inspectors. The inspectors do not have the legal authority to physically detain or frisk individuals they stop. Sworn police officers are not typically used as front-line fare enforcers. Police officers then respond to take custody of an individual who requires arrest. As an exclusion to the Fourth Amendment, the police officers may search an arrested individual prior to transport (Bonett, 2020). This would be where most of the contraband, such as weapons or narcotics would be seized.

The seizure of contraband was referenced 11 times in my study. The participants in my study advised they do not use fare enforcement as a pretextual reason to conduct a

stop; however, they have been successful in seizing contraband from those stopped for fare evasion. EC #2 advised that if a subject is stopped for fare enforcement and they have must be taken into custody (many times on a warrant), contraband is sometimes located search-incident-to-arrest.

> "If a warrant comes back, we then have to search the person prior to transport. So, anything discovered during the search of now the prisoner on the open warrant, which resulted from fare evasion, all those charges get tacked on."

WC #3 added, "If the fare [evasion] basically leads to something more significant, you take him into custody off of that."

In summary, the three themes of targeted enforcement, education over enforcement, and investigative follow up, were developed through semistructured interviews of four command level officials and two mid-level managers. To provide additional evidence for my themes and help ensure data saturation, I reviewed each agency's fare enforcement SOPs. The written procedures described where and when fare enforcement should be conducted as well as the methods to be utilized and therefore, they aligned well with my interview questions. Sworn officers and civilian inspectors work in a coordinated effort based on the legal authority each division holds. The SOPs provide that deterrence is the priority over enforcement. If it becomes necessary for members to act, warnings and summons are favored over arrest. However, each agency allows for investigative measures to be taken by their members when necessary.

Applications to Professional Practice

In this study, I explored strategies urban rail transit leaders use to reduce declining ridership associated with perceived disorder caused by fare evasion. The findings in this study could apply to both urban and suburban rail transit leaders as well as bus transit leaders seeking to lower disorder in their systems. The findings in the study indicate that urban rail transit leaders should utilize fare enforcement strategies that incorporate (a) hot spot policing, (b) focus on education over enforcement, and (c) investigative follow-up. Hot spot fare enforcement conducted by of transit personnel, sworn or civilian, can lower crime and disorder in those areas where fare evasion and disorder are prevalent. Based on the principles of LSS and the Kano Model, increased customer satisfaction based on a consistently secure riding experience will increase ridership and subsequently revenue.

If transit leaders use the fare enforcement strategies identified in my study, they will fulfill the requirements of the Kano model and LSS. The strategy I propose is efficient in the use of manpower and can increase customer satisfaction due to a lowering of crime and disorder. Not only does high visibility deter crime and increase the sense of security, but the fare enforcement itself allows transit personnel to further investigate crime in and around the system. Finally, fare enforcement strategies must be accomplished with community ‘buy in’ through communication and transparency.

Implications for Social Change

The findings from this study could contribute to positive social change that could be used by urban rail transit leaders to protect their riders from harm. Although crime reduction can be used by transit leaders to improve customer satisfaction, it is also

beneficial in a social context. The lowering of crime in urban rail transit systems will allow those who rely on public transportation to conduct daily tasks (Ríos et al., 2018). This includes, the economically challenged, the elderly or physically challenged, as well as urban youth. Additionally, the lowering of crime and disorder in an urban transit system can affect the crime in the surrounding jurisdictions (Di, 2017).

The use of urban rail transit will lower urban traffic congestion by providing another means of travel (Wen & Bai, 2017). Therefore, urban rail transit not only benefits those who use the service but those who choose another form of travel. Additionally, fewer vehicles being driven in an urban environment will lower air pollution (Hosseinabad & Moraga, 2017). In other words, if increased fare enforcement lowers overall urban rail transit crime, then more people will utilize it and pollution and congestion related to vehicular traffic will be reduced.

My study also revealed if fare enforcement is conducted in conjunction with community policing, the community will 'buy in' to the strategy. Koslicki and Willits (2018) warned that community policing is like an iron fist in a velvet glove where engagement is a veiled means to control citizens. However, the authors described the use of foot patrols with face-to-face engagement, removal of zero-tolerance enforcement, and communication through technology as all aspects of effective community engagement. These are all themes which were emerged from my study. My study provides evidence that, when properly conducted through engagement and communication, hot spot policing will be seen as legitimate by the community.

Recommendations for Action

The sense of security for transit riders has an impact on their overall customer satisfaction (Delbosc & Currie, 2012). This is because safety is a basic need grounded in the Kano model (Kano et al., 1984). The consistent use of limited resources is the basis of LSS (Rodgers et al., 2019). Therefore, urban rail transit leaders are tasked with developing strategies to deploy officers where they can have the most effect on crime and disorder. Hot spot, proactive enforcement through fare enforcement is a strategy, urban rail transit leaders can use to lower the perception of disorder.

Based on the findings of my study, I recommend strategic-level, urban rail transit commanders, whether they lead POP or POE based agencies, use high visibility, hot spot fare enforcement. This strategy can be effective whether the agencies use transit police, contracted officers from the surrounding jurisdictions in a task force model, or a layered approach with civilian and sworn law enforcement working together. The actual enforcement is secondary in importance to the high visibility deterrence and feeling of security provided by the officer working foot patrol. Additionally, when violators are stopped, these contacts can be used as investigative tools. At the same time, discretion and education can promote compliance and build an understanding with otherwise law-abiding passengers.

I think urban rail transit leaders can further build legitimacy for their fare enforcement strategies by becoming a part of the community. This includes meeting with residents outside of the transit system. Additionally, fare enforcement can be used to treat those in need if conducted in conjunction with social services. Finally, using social media

can assist in maintaining a relationship with the community. This is due to the exchange of information and impression the police and community are in this together. The results of my study could be presented to transit police command staff during interagency conferences or individually during CompStat meetings or in-service training. The case study results could also be presented in literature form to the executive leadership of transit agencies as well as elected officials and leaders of civic associations in surrounding jurisdictions.

Recommendations for Further Research

The aim of this study was to explore strategies urban rail transit leaders use to reduce declining ridership associated with perceived disorder caused by fare evasion. During the course of my research, I identified several limitations in my study. One of the limitations in my study was the qualitative method and multiple case study design. I recommend future researchers to use a quantitative method to test whether fare enforcement lowers crime and disorder subsequently increasing ridership and revenue. Data collection could use structured surveys with close ended questions. This would allow data to be collected from a larger sample size and would also allow for hypothesis testing.

My study was limited in perspective as well. I only interviewed those who conducted fare enforcement or collected documents related to fare enforcement. Future researchers may want to collect data related to the loss of ridership due to perceived police harassment. Future researchers may also want to collect data related to other

factors related to customer satisfaction. This may include rail safety, on-time performance, or accessibility.

The other limitations to my study were due to the global pandemic; COVID-19. I originally planned to travel to my partner agencies and collect evidence in person. I wanted to conduct the semistructured interviews with command level leaders face-to-face. Additionally, instead of conducting a third interview of a manager with each partner agency, I planned on conducting observations of fare enforcement being conducted. Due to social distancing protocols, these plans had to be altered. Although virtual interviews were productive alternatives, future research should attempt in-person exploration.

Reflections

I decided to pursue my doctoral degree as a means to further my knowledge of strategies urban rail transit leaders can use to lower crime. As my career as a transit police official has advanced, I have become increasingly interested in developing strategies to lower transit related crime in order to improve ridership. I have personally developed crime reduction strategies and participated in CompStat meetings. I have deployed limited resources to specific locations at fluctuating times, utilizing various tactics. Additionally, prior to starting my doctoral journey, I have been afforded the opportunity to meet with a number of leaders in other transit agencies throughout the US. Learning how other urban rail transit leaders conduct fare enforcement furthered my interest in learning about additional crime reduction strategies involving fare enforcement.

While conducting the research for this case study, I learned traditional business strategies such as the Kano Model or LSS can be used as a means to lower crime and improving customer satisfaction. In fact, I have taken a couple of LSS classes to better understand the principles of the model. Finally, through my research I revisited many criminal justice theories and found they can be used in a business sense as well.

Conclusion

In conclusion, I explored strategies urban rail transit leaders use to reduce declining ridership associated with perceived disorder caused by fare evasion. Participants in this qualitative multiple case study were command-level urban rail transit leaders. My findings identified three themes that could be beneficial for improving ridership by lowering disorder through fare enforcement. The themes identified were (a) hot spot policing, (b) focus on education over enforcement, (c) investigative follow-up. Transit leaders who use successful fare enforcement strategies could use their limited resources to lower crime and disorder in their urban rail transit systems. The efficient use of resources to produce a consistent riding experience, free of crime and disorder is the basis of LSS. This could, in turn, increase ridership and revenue by lowering the perception of disorder amongst patrons. This is because, per the Kano model, safety and security are essential to customer satisfaction.

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Appendix: Interview Protocol

Introduction	Hi _____ (interviewee). I really appreciate you taking the time to meet with me today. As you know, I'm Steve Boehm and I'm a doctoral scholar at Walden University and am working on a case study regarding strategies to decrease disorder and diminishing transit ridership through fare enforcement. I know effectively conducting proactive, hot-spot enforcement is important yet difficult. My goal with this case study is to explore what fare enforcement strategies urban rail transit leaders are currently applying and which ones are not working.
Research Questions	1. How does your agency perform fare enforcement as a component of overall crime reduction? 2. How do you measure the effectiveness of your organization's fare evasion enforcement strategies? 3. How does your agency promote its fare enforcement to deter fare evasion and reduce the fear of crime and disorder for your customers? 4. How does your agency measure the effects of crime and disorder on overall customer satisfaction and ridership? 5. What, if any, type(s) of backlash has your agency endured based on enforcing fare evasion? 6. What examples of fare enforcement do you have that led to the closure of reported criminal offenses or the reduction in the fear of crime? 7. What, if any, mechanisms do your organization's strategies contain for customers or employees to report fare evasion or other public conduct ordinance violations? 8. What else can you share with me about your organization's strategies for reducing declining ridership associated with the perception of increased crime and disorder caused by fare evasion?
Wrap Up	Those are all of the questions I have for you. Do you have any further comments you wish to make on the tactics of fare enforcement in urban rail transit environments? Thank you so much for your time today. Your

input has been extremely helpful to my case study. I will contact you in a few weeks to review my interpretations of our interview to ensure accuracy.

Member Checking

Introduction

Thank you for taking the time to meet with me again to conduct member checking. I am providing you with a succinct analysis for your review.

Research Questions

1. How does your agency perform fare enforcement as a component of overall crime reduction?

   Did I miss anything? Or, what would you like to add?

2. How do you measure the effectiveness of your organization's fare evasion enforcement strategies?

   Did I miss anything? Or, what would you like to add?

3. How does your agency promote its fare enforcement to deter fare evasion and reduce the fear of crime and disorder for your customers?

   Did I miss anything? Or, what would you like to add?

4. How does your agency measure the effects of crime and disorder on overall customer satisfaction and ridership?

   Did I miss anything? Or, what would you like to add?

5. What, if any, type(s) of backlash has your agency endured based on enforcing fare evasion?

   Did I miss anything? Or, what would you like to add?

6. What examples of fare enforcement do you have that led to the closure of reported criminal offenses or the reduction in the fear of crime?

   Did I miss anything? Or, what would you like to add?

7. What, if any, mechanisms do your organization's strategies contain for customers or employees to report fare evasion or other public conduct ordinance violations?

   Did I miss anything? Or, what would you like to add?

8. What else can you share with me about your organization's strategies for reducing declining ridership associated with the perception of increased crime and disorder caused by fare evasion?

   Did I miss anything? Or, what would you like to add?

Interview Protocol (Observation Alternative)

Introduction	Hi _____ (interviewee). I really appreciate you taking the time to meet with me today. As you know, I'm Steve Boehm and I'm a doctoral scholar at Walden University and am working on a case study regarding fare enforcement tactics to decrease disorder and diminishing transit ridership through fare enforcement. I know effectively conducting proactive, hot-spot enforcement is important yet difficult. My goal with this case study is to explore what fare enforcement tactics urban rail transit leaders are currently applying and which ones are not working.

Research Questions	1. What type of fare collection system does your transit system have and how does it affect your enforcement tactics? 2. How does the department's overall crime strategy get communicated to those conducting fare enforcement and addressing fare evasion? 3. How do you decide what location/time to conduct fare enforcement? 4. What techniques do you use to catch fare evaders, i.e., CCTV, plainclothes, observation posts? 5. How does your agency impose penalties for fare evasion? Is fare evasion a criminal or civil infraction, citation versus custodial arrest? Who determines eligibility for citation? 6. How do you use fare enforcement as a pretextual stop to further your investigation? 7. What non-enforcement techniques do you have to educate juvenile offenders or those who may have unintentionally neglected to pay their fare? 8. What adaptations have fare evaders made to your techniques and how have you all countered them?
Wrap Up	Those are all of the questions I have for you. Do you have any further comments you wish to make on the tactics of fare enforcement in urban rail transit environments? Thank you so much for your time today. Your input has been extremely helpful to my case study. I will contact you in a few weeks to review my interpretations of our interview to ensure accuracy.

Member Checking (Observation Alternative)

Introduction

Thank you for taking the time to meet with me again to conduct member checking. I am providing you with a succinct analysis for your review.

Research Questions

1. What type of fare collection system does your transit system have and how does it affect your enforcement tactics?

   Did I miss anything? Or, what would you like to add?

2. How does the department's overall crime strategy get communicated to those conducting fare enforcement and addressing fare evasion?

   Did I miss anything? Or, what would you like to add?

3. How do you decide what location/time to conduct fare enforcement?

   Did I miss anything? Or, what would you like to add?

4. What techniques do you use to catch fare evaders, i.e., CCTV, plainclothes, observation posts?

   Did I miss anything? Or, what would you like to add?

5. How does your agency impose penalties for fare evasion? Is fare evasion a criminal or civil infraction, citation versus custodial arrest? Who determines eligibility for citation?

   Did I miss anything? Or, what would you like to add?

6. How do you use fare enforcement as a pretextual stop to further your investigation?

   Did I miss anything? Or, what would you like to add?

7. What non-enforcement techniques do you have to educate juvenile offenders or those who may have unintentionally neglected to pay their fare?

   Did I miss anything? Or, what would you like to add?

8. What adaptations have fare evaders made to your techniques and how have you all countered them?

   Did I miss anything? Or, what would you like to add?