CITIZEN INVOLVEMENT AND LAW ENFORCEMENT: DOES COPRODUCTION AFFECT ORGANIZATIONAL EFFICIENCY AND ORGANIZATIONAL EFFECTIVENESS?

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Citizen involvement in the production and delivery of public service has been a long time topic of interest and controversial debate among scholars. Essentially, the belief has been that if citizens are actively involved in the process, public organizations and communities benefit in numerous ways that will ultimately lead to increased citizen satisfaction.

The purpose of this research is to explore the relationship between citizen involvement in the production of public safety and security and its effects on organizational efficiency and effectiveness of law enforcement agencies. To test the assumption that citizen involvement is positively correlated to organizational success and organizational efficiency of law enforcement agencies, a citizen involvement index was developed and used as the independent variable in ordinary least square regression (OLS) analysis. Three separate models are developed to measure the impact of citizen involvement on law enforcement.

Findings obtained through bivariate and multivariate analyses indicate mixed results. Bivariate analysis revealed that citizen involvement was negatively correlated to organizational efficiency while no statistically significant correlation was found in multiple regressions. In addition, through bivariate analyses, citizen involvement was positively correlated with crime rates reported to city police departments, whereas multivariate regression analyses indicated that citizen involvement does not have a
statistically significant impact on crime rates. Both analyses, however, provided support for the positive impact of citizen involvement on crime clearance rates. Finally, findings suggested that citizen involvement in public organizations and its effects on the production and delivery of public goods and services are overestimated from the perspective of law enforcement.
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CHAPTER 1
INTRODUCTION

General Description of the Area of Concern

The American public has been skeptical about government officials and their
demeanors. The media have also been increasingly portraying negative images of
officials through scandals and corruption. Citizen discontent about the government
has been increasing. Indeed, historically, government seemed abstract and distant
(Hummel & Stivers, 1998). Citizens feel disconnected due to government’s inefficient
and dishonest practices (Box & Sagen, 1998). For a country that is deeply rooted in the
strong principles of individual freedoms, expressing doubt concerning governmental
power may surface as being quite normal (King & Stivers, 1998) due to the belief that
individual liberty necessitates limited government (Hummel & Stivers, 1998). Although
there is clearly a gap between governmental officials and the public, citizens may
question the government if they sense that it exercises illegitimate power and may
consider its services and programs ineffective and troublesome if the government
appears to be disconnected (Berman, 1997).

The role and size of government has expanded since the second half of the
twentieth century (DeSario and Langton, 1987). Expectations from the government
and public scrutiny over the government also have been extended. Advanced
technology through increased Internet usage, in particular, has resulted in rapid
information-sharing regarding government’s actions and programs and its impact on people’s lives. Scandals and corruption in government have become more visible in today’s world. Thus, citizens have been more concerned about the government and public officials. It seems that the gap between government and citizens has been widening.

To bridge the gap, practitioners and public administration scholars have offered direct connection and collaboration between government and citizens. In other words, citizens should participate in government decision making and in the production and delivery of public services in an effort to work with government officials. As Chapin (as cited in King and Stivers, 1998) maintained, perhaps working together is the only way to rebuild a healthy relationship between citizens and government given that cynicism arises when citizens are not involved in public policy and public service processes. Public agencies, therefore, tend to increase communication ties through citizen involvement mechanisms.

Citizen participation in public agencies has become a popular movement that has resulted in an indispensable element of government and decision making (Langton, 1978; see also Melville, Willingham, & Dedrick, 2005). Although most issues related to government actions have traditionally been decided by public officials, this trend is becoming more difficult to continue because “citizens are the core of what makes public administration public” (Lando, 1999, p. 115). Hence, governments, particularly at the local level, have employed additional programs that involve citizens
in public policy making decisions, program implementation, and appraisal of
governmental actions and policy outcomes. The inclusion of citizens, indeed, increases
the value of government service provisions (Holzer and Kloby, 2005).

Beginning with the presidency of Andrew Jackson in 1829, a movement to
broaden democratic governmental practices has been encouraged through
government-sponsored civic engagement. The Administrative Procedure Act (APA) of
1946, for example, was a cornerstone for citizen involvement that brought uniformity
to public organization hearings (Ethridge, 1987; see also Langton, 1978), and the
Housing Act of 1949 further mandated citizen participation in urban renewal (Roberts,
2004). Governments have since employed new mechanisms to enable decision making
processes in which public officials and citizens work together to produce and improve
public service. Increasingly, communities have successfully considered their reliance on
citizens as a resource for public service (Sanger, 2005).

Researchers have regarded citizen participation to be a part of the new public
administration movement. Specifically, Ziegenfuss (2000) associated coproduction, or
the joint production of public goods and services by citizens and public employees, with
the new public management movement claiming that a governmental market-oriented
approach can produce the most cost-effective public service for citizens –the customers
(Denhardt & Denhardt, 2003; Jennings & Denhardt, 1987). Emphasis here is placed on
quality management, reinvention and reengineering, empowerment, decentralization,
and outsourcing as well as privatization. In addition, concerns related to new public
management can be met by citizen participation through the production of public services. However, because citizens are the customers or service recipients (deLeon & Denhardt, 2000; Jennings & Denhardt, 1987), citizen participation becomes more difficult. The solution is to view citizens as partners in order that the government can achieve its proposed organizational goals or, as Sanger (2005) stated, “working partnerships create trust, help shape a culture of citizen-centered activities ... and begin to establish reciprocity between citizens and government” (p. 54). Obviously, citizen participation in the production and delivery of public services is affecting current governance practices and will continue to affect our administration in the future (Tonn, 1996).

Clearly, citizens provide legitimization for governments (Levine, 1984), and their participation is vital to a democratic society’s functioning (Checkoway & Til, 1978). In addition, citizen involvement not only contributes to the improvement of democracy but controls public organizations. In this sense, Rousseau (as cited in Bjur & Siegel, 1977) pointed out that to prevent the government from exercising actions beyond the general public’s interest, citizens should exercise control through participation in decision making processes whereby they can influence decisions regarding public service production and delivery. Contemporary political science and public administration scholars argued the need to reconcile bureaucracy with democracy in an attempt to overcome problems related to representation of the common good, another reason
that governments should increase active citizen participation in the decision making process (Lando, 1999).

Certainly the United States is not a democratic country but rather a constitutional, representative republic. Although there are similarities between a democracy and a constitutional republic that elects representatives and enacts law, Peterson (2006) noted: “the sovereignty resides with the people themselves ... one may act on his own or through his representatives when he chooses to solve a problem. The people have no obligation to the government; instead, the government is a servant of the people, and obliged to its owner, We the People” (Electronic version, n.p.). Peterson further noted that the major difference between a democracy and a republic is “a Constitution that limits the powers of the government. It also spells out how the government is structured, creating checks on its power and balancing power between the different branches” (Electronic version, n.p.).

As a constitutional representative republic, the U.S. system of government demands active public involvement because citizens have sovereignty over its actions. In other words, the representative republic should be rewarded with citizen participation, or as Stivers (1990) emphasized, citizens should be accommodated in government halls and in the decision making process. Further, according to Cooper (1984), representative government should use its power ‘with citizens’ rather than ‘over citizens’ in order to serve the larger collective good since “no government can be efficient and equitable without considerable input from citizens” (Ostrom, 1996, p.
That is, “decision making [in government] without public participation is ineffective” (King, Feltey, & Susel, 1998, p. 319). Hence, community participation in decision making and policy formulation is both essential and desirable because government’s decisions touch people’s lives (Roberts, 2004; see also Lukensmeyer, Goldman, & Brigham, 2005). That is the reason, citizens need to participate in governmental decisions affect them (Kweit & Kweit, 2004).

Problem to Be Studied and Purpose of the Study

Because citizens represent the consumers of services, their participation in public decision making is expected to alleviate the accomplishment of organizational goals. In addition, citizens are more likely to understand community problems as well as identify potential solutions. In this sense, civic engagement may contribute greatly to solving as well as recognizing society’s actual problems. Thus, citizens’ diverse views and assistance are anticipated in facilitating organizational success.

Typically, researchers have suggested that civic engagement in government agencies adds promise to effective and efficient public service production and delivery (Bland, 2006; Church, Saunders, Wanke, Pong, Spooner, & Dorgan, 2002; de Lancer Julnes, 2001; Desario & Langton, 1987; Langton, 1978; Marschall, 2004; Powers & Thompson, 1994; Schneider, 1987). Additionally, community partnerships offer a number of benefits to local governments as well as public agencies including increased capacity and political credibility, shared responsibility, and ensured accountability. Public participation obviously produces numerous benefits for the government.
Law enforcement agencies are also instrumental in implementing community participation approaches through realizing the advantage of involving actively committed citizens. However, because scholars have directed little attention toward the relationship between citizen involvement in law enforcement and crime prevention and crime clearance strategies, research that examines the impact that citizen involvement plays on law enforcement is deemed necessary. A review of the existing literature also reveals that there are no comprehensive studies that have considered collaboration between citizens and police agencies to produce a safer and more secure society and efficient law enforcement organizations. Thus, research regarding the impact that citizen participation has on the organizational efficiency and effectiveness of law enforcement agencies will contribute significantly to the literature.

The intent of this research therefore is to discover if citizen involvement assists law enforcement in accomplishing organizational effectiveness through a reduction in crime rates and an increase of clearance rates. In addition, whether there is an impact of citizen involvement on law enforcement agencies’ organizational efficiency will be discussed throughout this research.

Significance of the Problem

Much of the literature relating to citizen community participation has focused on elections and political organizations, known as traditional political behaviors (Marschall, 2004). From a public administration perspective, however, participation indicates that citizens actively engage in public organizations and influence the behaviors and
practices officials (Schneider, 1987). Although public administration research provides some evidence that reveals the benefits which government entities gain from citizen involvement in terms of organizational effectiveness and efficiency (see for example, Church et al., 2002; Desario & Langton, 1987; Marschall, 2004; Tavits, 2006), civic involvement provides a synergy for public agencies (Wang, 1999) and empowers both parties, citizens and government agencies.

Research is needed to determine whether citizen engagement in policing reduces crime rates and increase crime clearance rates in local governments and increase organizational efficiency. Thus, this research will contribute to the literature’s gap regarding the impact that citizens have on law enforcement’s organizational efficiency and effectiveness.

Importance to Public Administration

There are several reasons of why civic engagement is important to the field of public administration and scholars. First, public officials and elected representatives, particularly in local jurisdictions, employ citizens in the decision making process (Callahan, 2005) that affects both governance and government-citizen relationships. Therefore, in terms of the impact that citizen involvement has on public administration, it is beneficial that research is conducted.

Second, citizen involvement is closely associated with the quantity and quality of public goods and services produced by government agencies (Schneider, 1987) as evidenced by the substantial amount of scholarly evidence pertaining to the significant
effects that citizen participation represent (Kweit & Kweit, 2004; Sharp, 1980; Whelan & Dupont, 1986; Whitaker, 1980). Similarly, there is controversy surrounding the public’s potential impact on an organization’s accomplishment of goals and efficiency (see for example, Desario & Langton, 1987).

Third, as Schneider (1987) pointed out, agencies’ actions and government programs do not produce desired results unless neighborhood residents actively participate in the assembly and delivery of public services and goods. Obviously, citizen involvement affects results, and in consequences success, of government policies.

Fourth, civic involvement requires essential structural and infrastructural arrangements to ensure that citizens actively take part in the production of public goods (see for example, Chilvers, 2008; Church et al., 2002; Foley, 1998; Pammer, 1992; Powers & Thompson, 1994) that influence the understanding and philosophies in public organizations. According to Gray and Chapin (1998), structures and arrangements of citizen involvement must be permanent and formal. Programs can then be designed and accomplished and decisions can be made because an agency “cannot do its work without community people, either legally or practically. It must find ways to work with them, and that means granting them significant authority over the conduct of project affairs, including the power that inheres in interpretive constitutive interaction using agency rules and resources” (Stivers, 1990, p. 104). Accordingly, public administration scholars must focus their attention on coproduction of public goods and services due to its drastic impact on public agency structures.
Fifth, citizen participation influences public employees’ attitudes and their commitment to the organization as well as motivation and job satisfaction (de Lancer Julnes, 2001), all of which are critical to productivity (Gortner, Nichols, & Ball, 2007). In other words, community partnerships affect public employees and workplaces in addition to government practices – reasons that practitioners and public administration scholars should examine civic involvement and its impact on government expenditures and productivity as well as public satisfaction.

Sixth, citizen participation influences public officials’ accountability (Brudney & England, 1983; see also Marshall & Goldstein, 2006; Olson & Dzur, 2004). Because citizens can plainly observe how public employees achieve service production and delivery, accountability is different from traditional public service. Therefore, as citizens become participants in the process, they will share in both responsibility and accountability.

Finally, researchers have maintained the positive impact that citizen involvement has on government decision making, production, and delivery of services (Brudney, 1986; Church et al., 2002; DeSario & Langton, 1987; Neiman, 1989; Sung, 1996; Ziegenfuss, 2000). However, little is known regarding citizen involvement and its possible influence in reducing crime rates and increasing crime clearance rates. Although public organizations are recognized as serving citizens effectively and efficiently, the impact that citizen involvement has on law enforcement efficiency has
not been researched. From this perspective, the present research is significant to both the field of public administration and policing.

Feasibility of the Study

Statistical methods and variables to be employed throughout this research are used largely within the existing body of literature to measure and analyze efficiency and effectiveness. In addition, accessible data sources as well as local government data enabled this researcher to develop a citizen participation index that is not available within the current literature.

The index was taken from a sample of U.S. cities with a population of 100,000+ and was designed to establish the level of citizen participation in each city. In addition, citizen participation mechanisms currently existing in law enforcement were used to expand the index which, in turn, will serve as a unique contribution to public administration and political science literature

Overview of Chapters

The following chapters provide an extensive and detailed discussion of citizen involvement in government. In Chapter 2, the theoretical framework of citizen involvement is introduced including the principle theory of coproduction, its history, and types of citizen involvement. In Chapter 3, a discussion of the societal, political, and administrative benefits derived from coproduction are examined. Next, Chapter 4 presents the challenges involved in citizen-government coproduction followed by reasons why governments adopt programs and an evaluation of existing programs.
A discussion focusing on citizen involvement in law enforcement agencies and their concerns regarding safety and security are addressed in Chapter 5, and in Chapter 6, the research design, methodology, and data utilized are described followed by a presentation of statistical analyses in Chapter 7.

Chapter 8 presents the results of theoretical, organizational, and political implications and an extended discussion of findings. The research concludes by pointing out limitations applicable to this research and offering recommendations for future studies.
CHAPTER 2
THEORETICAL FRAMEWORK

Introduction

A substantial portion of the existing literature focuses on electoral behavior of individuals as citizen participation in government (Marschall, 2004). However, citizen participation in government does not consist of electoral behavior only because there are other mechanisms of citizen participation in government. As depicted in Table 1, although scholars in the field of public administration define citizen participation somewhat differently, they all identify the term as involving citizens in the production and delivery of public goods. Citizen involvement, coproduction, coprovision, citizen-community partnership, grassroots participation, citizen engagement, citizen-driven government, and public participation are some of the terms used in the literature interchangeably. Thus, these terms will be used interchangeably throughout this research to refer to citizen participation.

Citizen involvement in government activities has been one of the major elements of public administration since Greek-city states (Roberts, 2004) and Aristotle (Stivers, 1990). Active citizens, according to Aristotle, act for the favor of collective good by joining in some aspects of government (Stivers, 1990). Such citizenship is not only valuable for the goals it aims to achieve, but also valuable itself because it enables individuals to draw and develop human capacities and virtues. Hence, the government is
Table 1

*Interchangeable Concepts that Characterize Citizen Involvement*

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<th>Concept</th>
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<td><strong>Authentic Public Participation</strong></td>
<td>Citizens and officials work from the beginning of the administrative process; citizen input is considered as a valuable resource for public service and citizens are considered to be equal partners (King, Feltey, &amp; Susel, 1998).</td>
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<td><strong>Active Citizenship</strong></td>
<td>Community members unite with public officials to exercise administrative discretion in an effort to achieve goals. Active citizens are permitted to make decisions that affect public service with the motive of public interest (Stivers, 1990; see also King &amp; Stivers, 1998).</td>
</tr>
<tr>
<td><strong>Citizen-Driven Government</strong></td>
<td>Citizens are included in the process of government decision making and implementation (Holzer &amp; Kloby, 2005).</td>
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<td><strong>Citizen Participation</strong></td>
<td>Citizen participation (1) attempts to influence public policy making and implementation of policy programs (Whitaker, 1980); (2) citizens fully participate in administrative proceedings and are given greater access to public organization information (Cupps, 1977); (3) power redistribution enables citizens to impact governmental decisions that affect their lives; (4) citizens share power with officials in taking actions related to the larger community (Roberts, 2004).</td>
</tr>
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<td><strong>Citizen Engagement</strong></td>
<td>Governments consider citizens as a scarce resource and establish a working partnership and citizen-centered government actions (Sanger, 2005).</td>
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<td><strong>Coproduction</strong></td>
<td>(1) Citizens assist public employees in providing public services through donation of time, or, citizens perform as public officials (Whitaker, 1980); (2) citizens provide goods and services that can be substituted for public goods and services;</td>
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<td>(3) citizens demand assistance from officials (Whitaker, 1980) (4) citizens participate in public services as clients and (5) communicate with public agencies to alter agency activities (Whitaker, 1980); (6) citizens influence the policy making process (Ferris, 1984); (7) arrangement and process of public services in which citizens and public agencies share responsibility to produce public goods (Marschall, 2004); (8) a synergy rise between government and citizen responsibilities; (9) citizens play an active role in the production of public services; (10) the production of public goods through a process in which people outside of the organization contribute by their deserved inputs (Ostrom, 1996); (11) public services are the joint production of citizens and public employees (Sharp, 1980); (12) citizens and officials collaborate to improve public service (Roberts, 2004).</td>
</tr>
<tr>
<td>Coprovision</td>
<td>Voluntary citizen participation to provide publicly produced goods and services with time and monetary donations being at the core of production and delivery of public services (Ferris, 1984).</td>
</tr>
<tr>
<td>Deliberative Democracy</td>
<td>Citizen involvement referred to as inclusive decision making (Mintrom, 2003).</td>
</tr>
<tr>
<td>Grassroots Involvement</td>
<td>Creating community ownership over public services and goods in order to involve citizens in the problems and solutions of policy issues and implementation of policy programs (Kaye, 2001).</td>
</tr>
<tr>
<td>Public Participation</td>
<td>Citizens’ involvement in activities related to governmental decision making processes and government actions (Wilson, 1999). governmental decisions that affect their lives; (4) citizens share power with officials in taking actions related to the larger community (Roberts, 2004).</td>
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responsible to establish means for citizens to be involved in administrative decision-making and actions (Stivers, 1990).

Public officials and neighborhood residents may work together to produce and deliver public services due to the potential benefits that can be derived through collaborative efforts. According to Powers and Thompson (1994), although public officials are responsible for producing and delivering services and goods, the delivery and “production of public services does not depend only on the behaviors of public officials. Time, effort, and skills contributed by citizens are often critical to the provision, production, and delivery of public services. Indeed some public services can be produced only when citizens and public officials jointly contribute to their production” (p.179).

As Thomas (1999) argued, many programs cannot be successful unless citizens and public employees collaborate in the production and the delivery of services. In other words, participating citizens increase the likelihood of success in an organization or policy program (Morrissey, 2000). When citizens and public officials collaborate in the provision of public services, this is referred to as coproduction of public services and goods.

Simply put, coproduction is the active and voluntary participation of community residents to jointly cooperate in producing and delivering public services with public officials (Brudney, 1986; Sharp, 1980; Whitaker, 1980). By utilizing citizens
as a unique government resource for service production and delivery, cooperative actions are emphasized (Sharp, 1980).

**Principle Theory of Coproduction**

The theory of coproduction is based on the idea of citizens and public officials joining together in a collaborative effort to produce and deliver municipal services (Ferris, 1984; Percy, 1987). Consequently, “citizens can play an active role in producing public goods and services” (Ostrom, 1996, p. 1073). Broadly defined, coproduction can include “anything from citizens’ requests for public services to citizens providing assistance to public organizations” (Mottiar & White, 2003, p. 2). Similarly, Rowe and Frewer (2004) suggested that coproduction is “the practice of consulting and involving members of the public in the agenda setting, decision making, and policy-forming activities of organizations or institutions responsible for policy development” (p. 512). Further, Whitaker (1980) pointed out that “rather than an agent presenting a ‘finished product’ to the citizen, agent and citizen together produce the desired transformation” (p. 241). Coproduction “offers the potential for cooperative linkages between citizens and urban service bureaucrats, and highlights the value of many everyday, commonplace, yet important citizen activities” (Sharp, 1980, p. 115).

The theory emerged from democratic ideals arguing that electoral institutions should be in touch with citizens. In fact, the idea implies that electoral institutions ensure an active interaction between the community as service recipients and public organizations as service providers, especially in local services. Therefore, as Pammer
(1992) claimed, public organizations are assumed to be more responsive to the needs of neighborhood residents because their interactions may provide reliable information regarding community demands as well as satisfaction and dissatisfaction with services rendered. Accordingly, agencies may organize necessary arrangements toward better service provisions that will ultimately lead to public satisfaction.

According to Ostrom (1996), coproduction does not occur spontaneously; therefore, certain pre-conditions must be present. For example, use of production technologies must permit citizen contributions, and laws, rules, and regulations must be available for joint production to transpire. In addition, co-producers should develop a sense of partnership and trust one another. Incentives may also be offered to encourage this joint endeavor between both parties.

Coproduction assumes that public agencies and citizens share mutual responsibility for the delivery of public services. Previously a main concern of public agencies, responding to citizen demands is now at the hands of the coalition between community and public officials. Thus, coproduction can be defined as a partnership between “professional citizens or citizen-administrators” (Cooper, 1984) and non-professional citizens to produce public goods and services.

Accordingly, coproduction may be characterized as the degree to which service recipients (residents and neighborhoods) and service providers (public officials) overlap. Public service is produced through their joint production and, therefore, citizens are not mere consumers but also co-producers of governmental services (Neiman, 1989; Sharp, 1992).
1980) through cooperative action (Rosentraub & Warren, 1987; Sharp, 1980). Joint production includes citizen engagement in government services rather than government being more responsive to citizens’ demands and expectations (Brudney & England, 1983). In other words, citizens are considered as active and cooperative service provision participants as opposed to passive recipients.

Ferris (1984) referred to the theory of coproduction as coprovision or “the voluntary involvement of citizens in the provision of publicly provided goods and services or close substitutes” (p. 326). That is, citizens and public employees work together to provide services to the public.

Civic engagement influences the provision of local government services and public goods (Marschall, 2004; see also Pammer, 1992 and Sharp, 1980). According to the theory of coproduction, citizens do not only participate in service provision but also support and assist public officials toward better services indicating that their participation in local governments influences the preferences of policy makers. When the community and public administrators collaborate to coproduce, eventually joint responsibility in public service will result. Of particular note, without active community engagement, a local government’s ability to effectively provide services and goods will be compromised. “Unless participation objectives are clear to all ... effectiveness of the participation will be suspect” (Rosener, 1978, p. 460).

Coproduction can be argued as a type of “self service” that citizens engage in for themselves (Cheyfitz, as cited in Brudney & England, 1983), and undoubtedly this way of
thinking in government is a redefinition of traditional service delivery. The new definition adds emphasis on sharing accountability between citizens and public administrators (Brudney & England, 1983; see also Marshall & Goldstein, 2006, and Olson & Dzur, 2004) and assists public organizations and officials given that citizens are no longer the only public service complainers but a responsible segment of these complaints. In other words, coproduction reshapes a citizen’s role from passive recipients to active providers whereas government’s role can be considered as cheerleading and facilitating active citizen involvement in government services (Neiman, 1989).

Given the benefits of joint efforts, the theory of coproduction also directs attention toward the mechanisms through which organizations provide opportunities for active public participation. In other words, local governments and organizations make necessary organizational arrangements to ensure that civic engagement and effective information flow between the community and organizations are established (see for example, Chilvers, 2008; Church et al., 2002; Thomas, 1999). Obviously, these concerns may require structural and procedural arrangements for local government and organization officials (Marschall, 2004). Research has revealed that public organizations institutionalize structures and procedures to persuade a community to become actively engaged in the service and provision of public goods (Church et al., 2002; Marschall, 2004). From the perspective of the theory of coproduction, neither citizens nor
governmental actors act in isolation for the public good but rather collaborate and share responsibility (Marschall, 2004).

According to Stivers (1990), coproduction must consist of four distinctive attributes. First, citizens who engage in government actions can implement their judgment that has an impact on public service. Second, the actions of citizens and public officials are incited by a public interest motive. Third, citizens learn to act wisely and develop wherein the coproduction process functions as a learning process. When considered as citizens rather than government clients or customers, and when citizens are able to influence administrative processes that satisfy citizen needs, they can make wiser judgments and build up better practices toward the government and its agencies. Finally, since public employees and citizens work toward the collective good, they have a unique sense of relationship where values and goals are shared. Coproduction can ensure efficacy of both citizens and administrative bodies, and upon achievement, “citizens and administrators can transform the agency setting into an authentic polis: a public space in which human beings with different perspectives join to decide what to do and act together for the public good” (Stivers, 1990, p. 96).

According to Powers and Thompson (1994), public officials should clearly outline the duties that are expected of citizens and support coproduction by providing them with information pertinent to the joint partnership (see also Sharp, 1980). Second, public officials should encourage citizens to become actively involved in the production of services by offering incentives. Favorable encouragements are critical and all service
providers can benefit, particularly if vulnerable to problems associated with volunteerism that some are unwilling to sacrifice effort and time. Finally, institutional arrangements are essential in taking advantage of the opportunity that collaborative efforts offer.

Kaye (2001) also identified three key elements common to community involvement in public service production and delivery. First, citizens must define issues or problems that are identified. Second, they must become involved in developing potential solutions and tactics to actual problems they are experiencing. And third, to empower community members, grassroots should be provided with instruments to influence and even control policy implementations.

Kaye also argued that a coproduction’s structure must be based on six “R’s” that represent the participants’ needs in any given coalition. First, citizens want to be recognized when they serve their society, and they expect respect as well. In addition, to feel a sense of being needed, citizens want their role to be prominent. Coproduction must also be structured around networks of relationships that usually induce involvement in joining particular activities. As participants in the production of public services, reward must outweigh the costs; therefore, participating citizens must see results that their contributions really matter and favorably impact public service.

Further, at the core of coproduction, Chilvers (2008), Church et al. (2002), and Sharp (1980) pointed out the importance of providing citizens access to pertinent information that can effectively help them join in the production and delivery of public
services and goods. On the other hand, certain public employees consider information as a critical power source and therefore do not want to share their knowledge with others. In other words, information is guarded by public administrators given that the person who controls information also controls decisions. In this case, because citizens are not well-informed, coproduction does not tend to produce desired outcomes.

History of Coproduction

Although Gastil and Keith (2005) recorded coproduction history’s beginning with the early 20th century, and Langston (1978) argued that civic involvement has accelerated since enactment of the Administrative Procedure Act in 1946 (see also Ethridge, 1987), implementation accelerated after the 1950s. For example, according to Kweit and Kweit (1987) who traced co-producing of public service delivery back to the early 1960s, vital citizen involvement steps were taken during the 1960s and 1970s. The widespread belief among government officials and policy makers was that public policy and organizations could be more responsive to citizen needs and demands as participation programs would lead to more awareness related to citizen concerns.

Certainly, citizens relied heavily on public employee decisions during the first half of the 20th century, and through the second half they participated in government and influenced decisions (Roberts, 2004). Public agencies today employ various types of citizen involvement tools in an effort to incorporate better public policies and service. In 1964, for example, the Small Business Administration (SBA) established a voluntary organization, where volunteer citizens provide public service, to assist and counsel
owners or prospective owners of small businesses (Brudney, 1986), a relationship that continues to be successful.

Although the roots of participation were initiated through citizen complaints, citizens later expressed concern about becoming a part of governmental policy and program development and implementation (Bezold, 1987). Especially in the late 1960s and early 1970s, demand for citizen participation in government services skyrocketed (Rosentraub & Warren, 1987). Some scholars and practitioners argued that if minority and disadvantaged groups participated, alienation could be eliminated and would thus result in an opportunity for improved communication between public employees and served citizens as well as a strengthened society. Accordingly, these groups could become an integral part of the larger community, and coproduction would bring them into the public sphere (Roberts, 2004).

Some may also argue that President Ronald Reagan’s New Federalism gave rise to the employment of coproduction by lessening the distance between public officials and neighborhood residents (Kweit & Kweit, 1987; see also Morgan, 1987). In addition, the Carter Administration endeavored to ensure citizen involvement (Langton, 1978). Nevertheless, citizen participation emerged in the mid-1990s (Ho & Coates, 2002) as one of two major public administration movements. Public administrators, politicians, and citizens shared the idea that citizens were not mere customers but rather owners of the government (Denhardt & Denhardt, 2000), a new thinking in the field of public administration that has affected governmental services, particularly at the local level,
due to its enormous impact on one’s everyday life. From this point of view, joint
government service production and delivery has become a vital concept for public
administration for almost two decades.

Denhardt and Denhardt (2000) maintained that the new public service (NPS)
movement in which “ideals such as fairness, equity, responsiveness, respect,
empowerment, and commitment do not negate but outweigh the value of efficiency as
sole criterion for the operation of government” (p. 164) restructured the thought of
citizens being considered as customers. Indeed, NPS provides the rationale that citizens
are government owners and shareholders in terms of coproduction, or, as Denhardt and
Denhardt argued, citizens are no longer mere customers of public agencies. As owners,
their input and ideas are of concern to public administrators, and they should therefore
participate in the production and delivery of public services.

Frederickson (1971) and Kaufman (1969) pointed out that citizen participation
can cure societal exclusion and alienation. Frederickson further noted that although
pluralistic government works in favor of some minority groups, it discriminates against
other segments –those who lack economic and political resources– or, for example, the
disadvantaged that leads to society’s deprivation and militancy. However, Kaufman
declared that if public officials can encourage disadvantaged groups to participate in
government service, the isolation of the underprivileged community can be overcome
(see also Langton, 1978). Citizen-government collaboration, therefore, indicates
successful outcomes in these neighborhoods (Wagenaar, 2007). As Ferris (1984) stated,
joint production of public goods and services tend to produce promising results in attaining equity among society’s sectors. From this standpoint, one might argue that the NPS movement helped raise community involvement in government (see also Jennings & Denhardt, 1987) because citizens are not only service recipients but also owners of the public service production.

As claimed by Rosentraub and Warren (1987), the use of voluntary citizens in the production of municipal services is the result of demands related to tax levels. For example, citizens demand better services in quality and quantity without spending more since higher costs equal higher taxes. Some local governments, therefore, employ citizen involvement programs to avoid potential tax increases.

Currently, citizen participation appears to be a popular international idea regarding government service provision. For instance, civic involvement and its mechanisms have increased in value among practitioners and scholars, as well as political bodies across the world including the United Kingdom (Rowe & Frewer, 2004; Wilson, 1999), India (Kilby, 2004), Costa Rica (Booth & Seligson, 2005), Austria (Pennington, 2004), Turkey (Gultekin & Gultekin, 2008), and other democratic systems as well.

The existing body of literature typically portrays the concept of coproduction as a collaborative effort between governmental agencies and community members. Nevertheless, there is evidence that voluntary associations (Bekkers, 2005), non-profit organizations (Hardina, 2006), international non-governmental organizations (Tsutsui &
Wotipka, 2004), and the private sector (Stockden, 2000) also employ strategies to include citizens in their activities. The trend appears to lean upward, and both citizens and public officials give the impression that they enjoy the collaboration. As Frederickson (1999) emphasized, cooperation is one of the models that modern public administration is built upon.

Types of Coproduction

As depicted in Table 2, a number of typologies for co-producing public services consist of two basic surfacing characterizations (Brudney & England, 1983). The first refers to the notion that citizens participate in service provision, and in the second, although citizens do not directly engage in service provision, they assist in the construction and formation of necessary social and physical conditions for producing and delivering services. Both descriptions have a common ground given that public service is a product of joint participation and shared responsibility by citizens and public officials. That is, coproduction mixes citizen input and public officials together toward better and more services with respect to diminishing costs and increasing quality (see also Church et al., 2002; Kweit & Kweit, 1987; Mottiar & White, 2003; Ziegenfuss, 2000).

The most frequently cited typology is taken from Brudney and England (1983) who argued that three types of coproduction differ according to the type of goods produced as a result: individual coproduction, group production, and collective production. Individual coproduction occurs when private benefits are produced for the participating individual, whereas group production takes place when group benefits are
Table 2

*Types of Citizen Involvement*

<table>
<thead>
<tr>
<th>Author</th>
<th>Type of Citizen Involvement</th>
<th>Definition</th>
</tr>
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<tbody>
<tr>
<td>Brudney and England’s (1983)</td>
<td>Individual Coproduction</td>
<td>Co-production produces private benefits for the participating individual</td>
</tr>
<tr>
<td></td>
<td>Group Production</td>
<td>When coproduction produces group benefits</td>
</tr>
<tr>
<td></td>
<td>Collective Production</td>
<td>Joint production leads benefits for collective structure</td>
</tr>
<tr>
<td>Whitaker (1980)</td>
<td>Citizens’ Requests For Service</td>
<td>Services are carried as a result of citizen demand</td>
</tr>
<tr>
<td></td>
<td>Citizens’ Assistance To Public Workers,</td>
<td>Community assists public employees to produce and deliver public service</td>
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<tr>
<td></td>
<td>Joint Interaction</td>
<td>Services are produced by citizens and officials together</td>
</tr>
<tr>
<td>Kweit and Kweit (1981)</td>
<td>Electoral Participation</td>
<td>Participation is a political process to elect representatives</td>
</tr>
<tr>
<td></td>
<td>Group Participation</td>
<td>Includes neighborhood groups</td>
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<tr>
<td></td>
<td>Direct Citizen-Government Contact</td>
<td>Includes individual citizen’s contact with public officials through letters, telephone calls, or personal interactions</td>
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<td></td>
<td>Direct Participation</td>
<td>Citizens serve like a public official which can happen through board or council memberships that incorporates the local governmental activities</td>
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<thead>
<tr>
<th>Author</th>
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</thead>
<tbody>
<tr>
<td>Rosentraub and Warren (1987)</td>
<td>Parallel Production</td>
<td>Services similar to services produced by public employees but are produced by citizens</td>
</tr>
<tr>
<td></td>
<td>Ancillary Actions</td>
<td>Actions expected from citizens such as reporting crime and obeying rules and regulations</td>
</tr>
<tr>
<td>Percy, Parks et al., and Warren et al (Schneider, 1987)</td>
<td>Joint Production</td>
<td>The collaborative effort of citizens to act in accord with a government unit or program to produce or deliver public goods</td>
</tr>
<tr>
<td></td>
<td>Parallel Production</td>
<td>Citizens’ efforts in a parallel way with public agencies or public programs without any direct contact or connection to government units or employees</td>
</tr>
<tr>
<td>Sharp (1980)</td>
<td>Dominant Model For Involvement</td>
<td>Public employees perform public services and citizens judge them</td>
</tr>
<tr>
<td></td>
<td>Coproduction</td>
<td>I Wherein urban services are produced through a conjoint responsibility of citizens and officials</td>
</tr>
<tr>
<td>Roberts (2004)</td>
<td>Indirect Participation</td>
<td>When citizens elect their representatives and these representatives act on behalf of citizens</td>
</tr>
<tr>
<td></td>
<td>Direct Participation</td>
<td>Citizens personally involve in government and share power with administrators in public decision making</td>
</tr>
<tr>
<td>Author</td>
<td>Type of Citizen Involvement</td>
<td>Definition</td>
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<tr>
<td>Wilson (1999)</td>
<td>Intense Involvement</td>
<td>Includes citizen juries and panels</td>
</tr>
<tr>
<td></td>
<td>Minimalist Involvement</td>
<td>Involves in opinion polls and perception surveys</td>
</tr>
<tr>
<td>Wang (2001)</td>
<td>Citizen Involvement</td>
<td>Citizens are not active participants; they are informed about actions and policies of public agencies</td>
</tr>
<tr>
<td></td>
<td>Genuine Civic Participation</td>
<td>Citizens can participate in decision making process of public organizations because citizens are considered as owners of the government and they have the right to participate in the production of public services</td>
</tr>
<tr>
<td>Morone and Kilbreth (2003)</td>
<td>Advocacy Groups</td>
<td>Citizens may form advocacy groups with specific interests and are willing to influence public agencies to attain their profit</td>
</tr>
<tr>
<td></td>
<td>Advisory Panels</td>
<td>Citizens sometime develop advisory groups to advise to the government entities</td>
</tr>
<tr>
<td></td>
<td>Community Mobilization</td>
<td>The mobilization of overlooked groups into the government halls</td>
</tr>
<tr>
<td></td>
<td>Xenophobes</td>
<td>Different segment of the society try to affect others as well as the government. This type of activity lead different segments involve in the government</td>
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<tr>
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<tbody>
<tr>
<td>Glaser, Yeager, and Parker (2006)</td>
<td>Neighborhood-Based Citizen Engagement</td>
<td>The voluntary participation of members of neighborhoods</td>
</tr>
<tr>
<td></td>
<td>Government-Based Citizen Engagement</td>
<td>Government officials encourage citizens to engage in government agencies to improve decisions in government</td>
</tr>
<tr>
<td>Rowe and Frewer (2004)</td>
<td>Traditional Mechanisms</td>
<td>Public hearings, citizen forums, neighborhood meetings, citizen advisory groups, citizen satisfaction and perception surveys, focus groups, and meetings with different segments of society</td>
</tr>
<tr>
<td></td>
<td>Novel Mechanisms</td>
<td>Consensus conference</td>
</tr>
<tr>
<td>Leach and Wingfield (in Callanan, 2005)</td>
<td>Traditional Instruments</td>
<td>Public meetings, questions and answers sessions</td>
</tr>
<tr>
<td></td>
<td>Customer-Oriented Instruments</td>
<td>Customer satisfaction surveys, complaints procedures</td>
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<td></td>
<td>Innovative Methods To Consult Citizens</td>
<td>Interactive websites, focus groups</td>
</tr>
<tr>
<td></td>
<td>Innovative Methods To Promote Community Involvement</td>
<td>Visioning exercises, environmental forums, citizens’ juries</td>
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<th>Definition</th>
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<tbody>
<tr>
<td></td>
<td>Hybrid (Transition) Participation</td>
<td>Partnership with citizens for the development of policies and implementation. Government with the people.</td>
</tr>
<tr>
<td></td>
<td>Active Participation</td>
<td>Citizens identify parameters and control the entire process. Administrators are consultants and advisors. Government by the people.</td>
</tr>
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</table>

produced. Likewise, collective coproduction can be said to occur when joint production leads to benefits for the entire community (see also Schneider, 1987). Clearly, the types of benefits produced determine the type of coproduction.

Whitaker (1980) further identified three categories of activities that comprise coproduction: requests for service by citizens, assistance to public workers by citizens, and joint interaction to produce desired service quality and quantity. Whitaker argued that citizens’ requests for service are vital because public services, namely fire fighting and medical care, are carried out as a result of citizenry demand. In addition, Whitaker stressed that since the mediating institutions, including schools, churches, and family continue to decline in the modern era, citizens’ assistance to public organizations has
become crucial in acquiring common objectives within the community. However, some service provision requires interaction by citizens and officials that necessitates further communication involving more than simply a request or assistance. In this type of activity, citizens also consider the problem and potential solutions and communicate with government officials.

The typology developed by Kweit and Kweit (1981) includes four broad categories of citizen-government participation: electoral participation, group participation, direct citizen-government contact, and direct participation. Group participation includes neighborhood groups, while direct citizen-government contact consists of individual citizen contact with public officials through letters, telephone calls, or personal interactions. Direct participation includes serving as a public official which can occur through board or council memberships by incorporating local governmental activities (see also Lando, 2003, 1999, for a discussion of Kweit and Kweit’s characterizations).

Rosentraub and Warren (1987) maintained that citizens can participate in public service delivery through parallel production and ancillary actions. Parallel production refers to services similar to those produced by public employees but are instead produced by citizens. Parents tutoring their chemistry student, for example, is a good illustration of parallel production. In the same way, parental monitoring of children against illegal use of drugs can be a good example of parallel production (see Tragesser, Beauvais, Swaim, Edwards, and Oetting, 2007). Ancillary behaviors are actions expected
from citizens that include reporting crime and obeying rules and regulations. These actions are believed to help improve public service.

Percy et al. and Warren et al. (as cited in Schneider, 1987), another group of scholars, claimed that there are two types of coproduction: joint and parallel. Joint production refers to the collaborative efforts of citizens to act in accordance with a government unit or program to produce or deliver public goods. On the other hand, parallel coproduction involves the parallel efforts of citizens with public agencies or public programs without any direct contact or connection to government units or employees.

King, Feltey, and Susey (1998) characterized citizen participation under two categories: conventional participation and effective, or authentic, participation. In conventional participation that appears to be symbolic, public officials control the interaction. Usually administrators formulate decisions, and citizens influence the decisions only if administrators want them to do so. Essentially, citizens do not truly affect decisions but rather simply judge them. Effective participation, on the other hand, involves administrative proceedings wherein citizens can have a real impact on decisions. Decisions are made with agency workers, and participation occurs from the beginning of the administrative process. In addition, citizen input is regarded as an important resource for government actions, and citizens are considered as equal partners or co-producers. Authentic participation empowers citizens because they
realize that their contributions matter and will produce positive outcomes. Citizen involvement is therefore central to public administration.

Similar to King et al.’s (1998) categorization of citizen involvement in government, Sharp (1980) considered their conventional involvement as a dominant model for involvement in which employees perform public services. Put differently, officials produce for citizens, and citizens judge them. On the other hand, authentic participation, or coproduction, occurs when urban services are produced through a conjoint responsibility of citizens and officials. In addition, Sharp pointed out three types of coproduction. First, citizens can voluntarily assist public employees in the production and delivery of public services and goods. Second, citizens can also produce public services by themselves without active official involvement, namely individual trash collection. And finally, citizens can act as service contributors by helping to establish necessary conditions or change the environment in which services may be more conveniently provided.

According to Roberts (2004), citizen participation can be classified under two categories: indirect participation and direct participation. When citizens elect their representatives and these representatives act on behalf of citizens, this is referred to as indirect participation. Conversely, direct participation involves citizens who are personally involved in government and share decision making power with administrators. Roberts also claimed that civic engagement includes the volunteer role of improving the community as well as the role of coproducer. Citizens playing a
volunteer role participate in activities that support their society’s development. In the coproducer role, citizens interact jointly with public employees to improve the quality and quantity of public goods and services.

There are two basic types of citizen-government involvement as identified by Wilson (1999): intense participation and minimalist participation. Intense participation consists of citizen juries and panels, whereas minimalist participation involves opinion polls and perception surveys.

Wang (2001) illustrated that citizen involvement occurs at two levels. First, citizens are informed about public agency actions and policies, but they are not active participants or coproducers. Second, citizens may participate in the decision making process because they are regarded as government owners and therefore have the right to participate in public service production. Wang defined the latter as genuine civic participation where citizens are active decision makers and can drastically influence governmental actions in actual public involvement.

According to Morone and Kilbreth (2003), citizen involvement in government can be divided into four categories: advocacy groups, advisory panels, community mobilization, and xenophobes. Some citizens may form advocacy groups with specific interests and are willing to influence public agencies to attain their objectives. In advisory groups, citizens may at times develop them in an effort to advise government entities. Community mobilization refers to the enrollment of overlooked groups into government halls. Finally, the idea of xenophobes implies that there are different
segments of society, for example, morals, race, world views, gender, and so forth. In other words, there is always an “us versus them” community mentality. Undeniably, different segment of the society try to affect others as well as the government. That type of activities lead different segments involve in the government.

According to Glaser, Yeager, and Parker (2006), there are two forms of citizen government participation: government-based citizen engagement and neighborhood-based citizen engagement. Government-based citizen participation refers to the idea that government officials encourage citizens to engage in governmental agencies in an effort to improve decisions (see also Mintrom, 2003). On the other hand, neighborhood-based citizen involvement consists of voluntary neighborhood member participation. In this form of civic engagement, public agencies take advantage of free labor, time, and sometimes, monetary support (see also Farrell, 2000). In other words, public officials employ citizens as a resource who work free of charge to meet immediate demands and to overcome community challenges. Research reveals that citizens have greater confidence in neighborhood-based involvement, and they are likely to adopt this form of citizen involvement.

Citizen involvement instruments appear to be diverse and range from traditional to novel mechanisms (Rowe & Frewer, 2004). Novel mechanisms include consensus conferences (Rowe & Frewer, 2004) and on-line dialogues (see also Bonner, Carlitz, Gunn, Maak, & Ratliff, 2005; Weiksner, 2005), whereas traditional public involvement instruments include public hearings, citizen forums, neighborhood meetings, citizen
advisory groups, citizen satisfaction and perception surveys, focus groups, and meetings with different segments of society. However, from a broad perspective, signing up for food stamps, calling on law enforcement officers, paying taxes, involvement in community meetings, and attending school can be considered as examples of coproduction (Schneider, 1987).

Leach and Wingfield (as cited in Callahan, 2005) characterized citizen participation mechanisms into four groups: (1) traditional tools that include public meetings, (2) customer-oriented participation mechanisms that involve citizen satisfaction and perception surveys as well as citizen complaint boards, (3) innovative mechanisms for learning the opinions of citizens and incorporating focus groups and interactive online interactions, and (4) innovative instruments for greater citizen participation including forums and citizen juries.

Timney (1998) emphasized three citizen participation models. First, the passive or traditional model that implies government for the people does not involve citizens until actual governmental work is completed. In other words, citizens are only asked for their opinions at the end of a project. Government articulates policy and implementation and administrators control during the entire process. Second, the hybrid model that depends on contributions from citizens represents a partnership for developing policies and implementation. This model can be characterized as government with the people. Third, in the active model, citizens identify policies whereas administrators play the role of consultants and advisors. Because citizens
control the entire process, this model represents the idea of government by the people. Timney stressed that government by the people is the ultimate goal of public administration.
CHAPTER 3
BENEFITS OF COPRODUCTION

Introduction

Existing literature provides an optimistic foundation in relation to the impact that coproduction has on society, citizens, organizations, and government (Thomas, 1987). In this chapter, an in-depth discussion is presented on the social, political, and administrative benefits that emerge when citizens and public employees work together to produce services and goods for the societal interests.

Societal Benefits

_Coproduction is constructive._ Stivers (1990) asserted that coproduction is intrinsically valuable in that it helps to develop human capacities and virtues. When citizens engage in coproduction to produce goods and services for the public interest, they exercise a “public-spirited moral character” (Roberts, 2004, p. 323).

_Coproduction is educational._ Rousseau (as cited in Bjur and Siegel, 1977) claimed that citizens can learn about the relationship between special interests and collective interests through participation in government’s service provision. When citizens participate, the possible conflict between personal versus community needs tends to diminish. On the other hand, if citizens do not participate, they sometimes are inclined to rely on their own personal interests at the community’s expense. Typically, this is due
to a lack of knowledge regarding the function that coproduction plays in balancing needs.

*Coproduction makes citizens more realistic about their expectations from government.* According to Levine (1984), when citizens participate, they will observe the necessary requirements involved in the time, effort, and monetary resources it takes to produce public services. For example, they will develop a better understanding of how costly and difficult some services are to produce, and their knowledge of service production and delivery will expand as well. Therefore, it is likely that citizens will demand less from the government which will, in turn, decrease costs.

*Coproduction improves a sense of citizenship.* As Levine (1984) noted, coproduction improves a sense of citizenship (see also Button & Ryfe, 2005; Carson & Hartz-Karp, 2005) by creating better trust in the government (see also Berman, 1997; Fink & Sealy, 1974). As citizens increasingly play active participatory roles, they will develop more interest in government agencies and public employees that will ultimately lead to an improved sense of citizenship (Roberts, 2004).

*Coproduction empowers communities.* De Lancer Julnes (2008) pointed out that joint production instills a sense of empowerment among citizens as a result of perceiving themselves as influential (see also Julian, Reischl, Carrick, & Kathrenich, 1997) as well as a feeling of recognition that their efforts truly matter (Foley, 1998). In an earlier study, Buck (1984) claimed that joint production and delivery of public services enable citizens to believe that they make a genuine contribution to government policy.
making and will be empowered if given the chance to have an effect on the process of service delivery and production through expanded choices (Kilby, 2004). In short, greater citizen involvement promotes a stronger civil society.

*Coproduction is integrative.* Similarly, coproduction is likely to develop citizens’ loyalty to neighborhoods and their community. Open contact with public officials and other residents of community will energize citizens to improve their community and neighborhoods. Since coproduction happens to improve services provided for citizens, people will have favorable attitudes toward this coalition which in consequence improves citizens’ loyalty to community, which eventually develops a community spirit among residents (Levine, 1984). Loyalty to neighborhoods and community as well as the country is likely to flourish different segment of society if they are included in the coalition for coproduction. Hence, alienated segments of society may become connected parts of the everyday life in the community. Once it is accomplished, community spirit may function as a panacea to deal with problems of the society. Equitable distributions of services, therefore, says Levine (1984), can be accomplished through coproduction of public service. Callanan (2005) argued that increased contacts between citizens, stakeholders of government, and government officials through participation may reduce alienation that many people feel toward public officials and government institutions.

*Coproduction is equalitarian.* When citizens have a voice by participating in government decision making, emerging public policies will be more equalitarian due to
the equal sharing of both benefits and burdens (Rousseau, cited in Bjur and Siegel, 1977) by different segments of a society and government officials.

Political Benefits

_Coproduction increases government transparency._ Broadened participation among citizens is assumed to increase openness and representativeness between public agencies as well as political institutions (Cupps, 1977). Cupps further noted that wider participation functions as an instrument to check administrative discretion against misuse. Additionally, because information flow and openness of administrative processes benefit society, citizens may choose to participate in decision making processes through government halls prior to final policy rulings.

_Coproduction enhances government practices._ Citizens who participate in joint production can significantly contribute to public policy and decision making (Bingham, Nabatchi, & O’Leary 2005; see also Ebdon & Franklin, 2004) by enabling public officials to become aware of issues that really matter which will eventually improve the quality of governmental decisions (Creighton, 2005). Obviously, Bingham et al. conclude, citizen involvement makes public administrators to develop and use best practices in government agencies.

_Coproduction benefits local governments._ Citizen involvement is also likely to increase the capacity of local governments (Brudney, 1986). It develops neighborhood capacity to handle the problems the society faces (Scully & McCoy, 2005; see also Potapchuk, Carlson, & Kennedy, 2005). Obviously, involving citizens in public agencies
contributes to the decentralization of public services to local governments and neighborhoods. Decentralized public service is more likely to cure local problems because such services are more capable of dealing with unique-problems of neighborhoods. It is also helpful for curing budget deficiencies of poorer local governments. Therefore, coproduction is welcome and promoted in local governments.

Cook (2007), in a similar way, argues that citizen engagement in local level emphasizes local autonomy and makes governments more democratic. It also reenergizes local governments as self-government as well as active citizenry. The construction of constant relationship between citizens and government agencies at local level is central to local government regime in the U.S.

Local governments are believed to solve their problems better than federal government since local governments provide a convenient basis for citizen participation, according to Bratt (1987). This notion has been articulated by bipartisan voices. It is believed so because citizens tend to focus more on their immediate neighborhoods. Coproduction positively influences autonomy of local governments because it values small and responsive government instead of larger, remoter, and bureaucratic one (Box and Sagen, 1998).

Coproduction initiates two-sided feedbacks. Brudney and England (1983) found that coproduction results in effective and influential feedback because citizens actively participate in government and can therefore observe its capabilities and resources.
firsthand. Since participating citizens are aware of the government’s potential, they will offer beneficial feedback in an effort to more effectively provide public service within government’s economic and legal constraints.

From another point of view, coproduction may possibly enable untraditional feedback from public officials or, in other words, feedback from organizations to citizens. Traditional public service delivery has room for only feedback from citizens to public agencies. Coprovision, nevertheless, enables public officials to give feedback to recipients. Two-way-feedback is likely to help both sides to truly understand and influence each other as well as to develop healthier relationships. That is the reason public officials are responsible and should be charged with establishing channels that enables citizens to participate in public service not only as recipient but also as provider. In other words, as Karpowitz and Mansbridge (2005) highlighted, citizen involvement enables both side to learn each side’s values and concerns.

Coproduction increases citizen satisfaction. When citizens participate in government activities, their satisfaction increases (Kweit & Kweit, 2004) because participation of citizens leads to be responsive to citizens’ demands which in consequence leads to increasing citizen satisfaction (Wang, 2001; see also Marschall, 2004). Wang maintained that when citizens do not participate, public employees tend to think in terms of efficiency rather than greater citizen satisfaction.

Coproduction institutionalizes citizens’ support for government. Of importance, Brudney and England (1983) maintained that citizen participation channels help support
government institutionalization given that programs are continually designed to insist that community residents participate in public services. This is different than partisan support for government because citizens actively engage in government regardless of party affiliations and become a part of government. Citizens can see themselves as government throughout time. They hence are more likely to support government. Therefore, it can be argued that coproduction results in more support for governments and public organizations.

Coproduction improves citizen-government relationships. Coproduction may close the gap between public officials and community residents because it provides better channels for communication (Cheng & Fiero, 2005; Thomas, 1987). It is a crucial opportunity to build a healthy society; in other words, prosperity of the society depends on how involved its citizens are (Ziegenfuss, 2000). When citizens are involved in government processes, they report decreased cynicism and skepticism about government (Foley, 1998). Coproduction, hence, increases citizens’ trust in public administration (Gray and Chapin, 1998). Therefore, says Levine (1984) by citing from Long, citizen participation secure citizenship because responsible citizens contribute the government services actively and provide support for those activities. That is to say, coproduction produces trusted government and trustee communities (e.g. de Lancer Julnes, 2008) in addition to effective and efficient delivery of public services and goods. Coproduction, hence, restores the trust of citizens and provides support from them.
In a society that has more widespread affluence and education than ever before, the prospects for successful devolution of service responsibility to citizens from the state increase, and with it a concomitant improvement in the relationship between the public employee and the citizen as they come to share more service and decision-making responsibility… coproduction lays the foundation for a positive relationship between government and citizens by making citizens an integral part of the service delivery process. Through these experiences citizens may build both competence and a broader perspective, a vision of the community and of what it can and should be become. (Levine, 1984, p. 181)

Mosher intriguingly emphasizes that citizen involvement increase morale and decreases the resistance for change within the society.

Wang (2001) argued that citizens’ trust in government decision-making increases with open and accountable discussions about government’s decisions and difficulties that public agencies face. Without citizen participation, neighborhoods tend to be skeptical about governmental decision-making which leads to distrust in government employees. Citizen participation eliminates such danger.

*Coproduction divides responsibility.* Delegation of policy responsibility is another significant advantage of co-provision (Levine, 1984). Many problems that governments face emerge from household actions. For example, driving while intoxicated, excessive alcohol consumption, illegal use and possession of firearms, and an abundance of other behaviors related to everyday activities are issues that the government is held accountable for initiating policies and taking action (Neiman, 1989). However, when actions are taken and they fail, the responsibility lies solely on government. Conversely,
public deliberation transfers a share of the blame on to citizens, as coproducers thus passes policy responsibility on to community residents.

*Coproduction produces political benefits.* Conjoint actions of citizens and government employees tend to provide political benefits as well as economic gains (Rosentraub & Warren, 1987; see also Kweit & Kweit, 1987). Cooperative actions of citizens make them a part of decision-making process of municipal services. Citizens and elected officials are likely to have open and close relationship through these decision making activities. Since these decision-making processes outline character of municipal services, citizens are more likely to be politically supportive of government policies and programs. Citizen participation, in other words, provides political stability (Kweit and Kweit, 2004).

*Citizen involvement provides political credibility for elected officials.* Ho and Coates (2002) maintained that citizen participation provides positive results for politicians. Citizen involvement provides political credibility for elected officials and enables citizens to directly offer government input. Accordingly, citizens believe that the government represents the people, and as such, they develop close relationships with elected officials through joint public service production and acquire a truer picture in evaluating elected officials (see for example, Kweit & Kweit, 1987).

*Coproduction enhances representative democracy.* Coproduction, in the same way, enhances representative democracy (Callanan, 2005; de Lancer Julnes, 2008; Fishkin and Farrar, 2005; Sokoloff, Steinberg, & Pyser, 2005; Wilson, 1999). Involving
citizen can make government more connected to the public (Zanetti, 1998). When governments establish programs for citizens to participate in government services, they reveal the message that they want to promote citizens’ interest and preferences as their representatives. Since citizens see that their representatives want to promote their values and interest, they value representative government more. In addition, coproduction mechanisms allow stakeholders to say something between elections which are usually held every four or five years (Callanan, 2005). Callanan also states that attendance at elections has been declining (see also Bjur & Siegel, 1977). That is the reason, government officials should provide additional opportunities to citizens for participation other than elections. This, in consequence, may arouse political participation. Therefore, involving citizens in government decision-making promotes representative democracy.

Coproduction promotes democracy. Rigorous coproduction effort also promotes the values of the society (DeSario & Langton, 1987). Citizens, in return, value political system and the government further. This inevitably increases the likelihood of the acceptance of governments’ decisions by citizens. Neighborhoods’ involvement in the production and delivery of public service can be considered as participatory approach and hence enhances democratic ideals (Mottiar & White, 2003). It can be even considered a balance between representative democracy and direct democracy in which citizens directly rule. Because when citizen participate in the production of services they influence decision-making about problems about needs and problems of community
and identify solutions and policy initiatives. Mosher (1968) stated that citizen involvement enhances principles underlying democracy since participation provides respect for individual citizens and egalitarianism as well as protection of minorities.

**Administrative Benefits**

*Coproduction functions as a resource for public service.* Coproduction is likely to improve quality of services (Kweit & Kweit, 2004) and goods as well as the quantity of services provided (Sharp, 1980; Whelan & Dupont, 1986). It is especially vital for urban service delivery when economic resources are limited. Accordingly, citizens are helpful to insure quality of life even under fiscal constraints (Brudney & England, 1983). Citizen engagement in the delivery of public service may function as a panacea for fiscal stress (Levine, 1984). Indeed, decreasing public resources force government agencies to utilize citizens as partners to produce and deliver public services (Gray & Chapin, 1998). With respect to resource decline in government, citizens’ participation and producing public service jointly function as a new source for public agencies.

*Coproduction is cost-effective.* Coprovision can be considered another way of reducing costs in government (e.g., Church et al., 2002; Creighton, 2005; Mottiar & White, 2003; Rosentraub & Warren, 1987; Ferris, 1984). Kweit and Kweit (1987) stated that voluntary citizen action is particularly targeted when resources are scarce since voluntary labor does the same job free of charge. With the emergence of New Public Management philosophy in public administration all across the world, reducing costs has been one of paramount issues in public administration. Thus, public officials are
seeking ways to reduce costs. Indeed, incorporating citizens into public agencies to produce public service jointly with public officials tend to impose additional costs for both sides; however, making citizens engage in services and getting their help as volunteers can save some personnel costs for governments (Brudney, 1986). Put differently, public officials not only are willing to support citizens’ joint and shared responsibility in service delivery, but also they are to some extent bound to engage community residents due to budget declines. When public organizations allow citizens to coproduce public goods and services, the government saves labor, time, effort, and financial resources.

Budgets of public agencies tend to decrease over time (Brudney, 1986). Public administrators are aware of that voluntary and cooperative citizens may decrease expenditures. Clearly, citizen participation decrease costs as well as increase quantity of services. In other words, coproduction of public officials and citizens is likely to produce more services and fewer costs. Public officials are likely to welcome citizens’ and their inputs in the production and delivery of public services to overcome fiscal strains.

_Coproduction is innovative_. Citizen participation is also likely to ease to discover the problems and produce possible solutions. Joint production of public service by citizens and public officials brings innovation in decisions about collective problems of urban areas and producing better public services (Levine, 1984). Especially citizens’ inputs and feedbacks about current policies will help promote improvement in policy choices (Rosener, 1978) because citizens are affected from the implemented policies
and programs. If current public service delivery reveals problems, coproduction promises improvement since the coalition is more likely to try new techniques and policies to deliver services (Neiman, 1989). In other words, Reagan and Fedor-Thurman (1987) maintained that citizen involvement in government, when carefully applied, can broaden the ideas, knowledge, and perspectives that are crucial for the development of substantive policy initiatives. It can also ease the value preferences among competing interests.

_Coproduction implementation creates more realistic public agencies._

Participating citizens can also help public agencies to meet citizens’ expectations. When citizens engage in government they will see the capabilities of the government. Hence they can adjust their expectations to the capabilities of the government. Accordingly, it will be possible to meet expectations of the society. This will help the development of public organizations’ positive image in the eyes of citizens because some people believe that many public organizations produce policies to justify their status and to construct their position in the eyes of people and the media. However, since citizens actively engage in service delivery, public organizations will take real actions to overcome the problems that society faces. “Only citizens have direct knowledge that makes it possible to connect the abstractions of the law with the real needs of people” (Hummel & Stivers, 1998, p.48).

_Coproduction improves implementation._ If citizens are involved in governmental decision making, they will assist their representatives and influence decisions made and
policies developed that tends to establish a sense of citizen ownership in public policy (Callahan, 2005; Creighton, 2005). Subsequently, because citizens will strive to make their contributions work, they will enthusiastically support implementation of policy programs. In other words, participation improves program implementation because neighborhood residents will facilitate the program’s achievement (Thomas, 1987). Similarly, citizen contributions may likely produce future policies that will result in enthusiastic acceptance of the outcomes.

Coproduction enhances government effectiveness and efficiency. Shared responsibility and joint production of public service provide unique contributions to public organizations in accomplishing greater effectiveness and efficiency of government services (Brudney, 1986; Church et al., 2002; Crosby & Nethercut, 2005; DeSario & Langton, 1987; Mosher, 1968; Neiman, 1989; Schachter & Aliaga, 2003; Ziegenfuss, 2000) since coproduction let citizens to affect the content of many public services and goods (Whitaker, 1980). It enables public agencies to be effective because greater citizen participation enables public officials focus on real problems and societal dispositions and make necessary changes that the public demands. Participating citizens also help public officials to remove barriers to produce effective public services.

Coproduction increases the government’s effectiveness according to Thomas (1987) (see also Desario & Langton, 1987; Washnis, 1976; Ziegenfuss, 2000). There are different ways that lead to increases in public productivity. First, coproduction can
maintain the level of services provided with fewer resources. Service level, second, can be increased with a given level of resources. And finally, coproduction can increase the level of the fit of public services to citizen demands and concerns. Coproduction seems to be most effective with the consideration of the third standard. Accordingly, citizen participation drastically influences success of public organizations. Although there are differences among local governments in the degree of citizen participation, it is an effective tool to legitimize and to make public organizations effective and efficient with the help of citizen input and shared responsibility for practices of governments. It seems that without citizen engagement public organizations will face challenges to meet public demands.

Similarly, civic engagement is unique in contributing to organizational efficiency because it saves monetary resources and provides enthusiastic and voluntary labor (Percy, 1987). Accordingly, when citizens and public workers jointly produce goods and services, it results in efficiency, says Ferris (1984). Citizen engagement in government, as Pammer (1992) highlights, is becoming more popular because it is beneficial for public organizations for the accomplishments of efficiency and preserving standard procedures for conducts of organizations rather than political factors. In other words, coproduction between citizens and public officials benefit public officials particularly for cost efficiency and maintaining standard operating procedures for service provision and delivery. Accordingly, Mintrom (2003) argued that coproduction can undertake bureaucratic inefficiency.
Coproduction increases government service quality. The increase in quality of public services is another advantage that citizen involvement offers (Ho & Coates, 2002; Ziegenfuss, 2000; Sharp, 1980). Given that participants know and understand the demands and needs of community residents better than public employees, service quality can be improved through their recommended adjustments in the delivery and production processes. Notably, Mosher (1968) claimed that coproduction pledges better government decisions due, in part, to the diverse opinions and knowledge of citizens involved in the decision making process.

Coproduction increases quantity of services. Citizen involvement in government decision-making tends to produce more services because residents of neighborhoods actively participate in program implementation instead of passive acceptance of implementation by the government (Thomas, 1987). Active citizens’ engagement in service production and delivery, therefore, can produce more services.

Coproduction provides legitimacy for governmental actions. Kweit and Kweit (2007) suggested that citizens who participate in government decision making are more likely to support its actions and public policy, while Creighton (2005) earlier argued that government achieves and maintains legitimacy through visible and credible decision making processes that are implemented through citizen involvement. Thus, according to Herbert (2006), various agencies adopt citizen involvement programs to maintain their legitimacy. Notably, Sementelli (2006) claimed that public administration attains its
legitimacy through the notion that citizen involvement may alleviate problems within government halls.

In addition, Wang (2001) argued that by voicing their immediate needs and concerns, participating citizens assist public organizations in clarifying goals and service priorities that eventually justify the goals and missions (see for example, de Lancer Julnes, 2001). This is especially important when government agencies are assigned contradictory goals.

Coproduction improves performance management. Similarly, coproduction of public services provides unique benefits for performance measurement in government (de Lancer Julnes, 2001; Ho & Coates, 2002; Kelly & Swindell, 2002). When citizens participate in performance measurement of public employees, it legitimizes such measurement and enables decision-makers to use these measurements as a decision-tool. When elected officials use performance measurement in which citizens participated, it reveals a signal that citizens’ input and the process itself are valued. Involving citizens can develop and improve performance measurement systems, thereby providing a strong legitimization for using performance measurement in decision-making. Put differently, when citizens participate in the processes of measuring performance of public employees, not only does the result often arise as higher quality of performance measurement and more legitimate decisions in the eyes of service receivers but also citizens’ trust in government and perception of governments’ legitimacy increases (see for example, de Lancer Julnes, 2008; Wang, 2001). If citizens
are not included in performance measurement system in public administration, such measurement programs may not reflect values and concerns of citizens and it would not be responsive to citizens’ preferences (Kelly as cited in de Lancer Julnes, 2008; see also DeSario and Langton, 1987). Therefore, citizens’ involvement in performance measurement benefits public originations.

*Coproduction makes officials more accountable.* Citizen demand for government accountability has been increasing for many decades (Gray & Chapin, 1998). Scandals like Watergate and issues like the Vietnam War heightened the demand. Coproduction helps government to ensure accountability to citizens if citizens participate in designing and implementation of performance measurement tools (Ho & Coates, 2002; see also de Lancer Julnes, 2008; Sharp, 1980; Wang, 2001). Such participation provides unique insights about citizens’ concerns about public employees’ performances. Since citizens know what the criteria performance measurement based on are, they perceive the government as accountable to themselves. Citizens can address more effectively what to measure in terms of performance of employees in public administration. Without active citizen involvement in performance measurement of public officials what matters for citizens stay vague and inaccurate (see de Lancer Julnes, 2008). Coproduction obviously enables public administration to address citizen concerns.

*Coproduction ensures “active accountability”* (Stivers, 1990). According to Stivers, legitimacy of government
requires active accountability to citizens, from whom the ends of government derive. Accountability, in turn, requires a shared framework for the interpretation of basic values, one that must be developed jointly by bureaucrats and citizens in real-world situations, rather than assumed (in King et al., 1998, p. 319).

Government legitimacy thus comes from active citizens who participate in government.

Coproduction is versatile. Unquestionably, civic involvement in the production and delivery of public services enables agencies to make necessary changes and adjustments regarding issues that arise when public policies and programs are initiated. As the affected party, citizens are the ones who observe what works and what does not. Since they provide insights relating to problems and solutions during implementation, coproduction assists public agencies in taking corrective actions to solve problems that may arise.

Coproduction creates community capacity usable for better public services. Correspondingly, joint production and delivery of public services enable public officials to take advantage of community capacity, or the notion that citizens in a given community collaborate in an effort to develop strong and long-term relationships to identify societal goals and solve community problems (Mattessich & Monsey, cited in Duffee, Renauer, Scott, Chermak, and McGarrel, 2006; Schwinn, Kesler, & Schwinn, 2005). Joint citizen production provides benefits for public officials to gain community experience and fully utilize community capacity to effectively and efficiently produce and deliver public goods.
Coproduction develops workplaces. Ziegenfuss (2000) argued that because public officials consider citizens to be partners rather than obstacles, the government’s internal environment tends to be positively influenced by adopting a coproduction approach. A government employee’s participatory working life helps to develop an occupational culture that places great emphasis on teamwork which, in consequence, brings success and effectiveness in public service terms.

Coproduction benefits public employees. Mosher further emphasized that when citizens and public officials work together, employees are afforded a greater degree of self-actualization. Similarly, citizen participation encourages a greater degree of employee commitment to an organization and to the community and contributes to an employee’s development as well.
CHAPTER 4

CHALLENGES OF COPRODUCTION

Introduction

Although citizen involvement in public services tends to help government revitalize, it is incapable of producing only positive results (Thomas, 1987). In other words, coproduction does not come without cost (Ford, 2002; Kweit & Kweit, 1987; Morash & Robinson, 2002; Ostrom, 1996; Thomas, 1987; Ventriss & Pecorella, 1984; Wilson, 1999). Indeed, some scholars and practitioners consider coproduction as a burden to both citizens and government agencies (Stivers, 1990). The following discussion identifies the societal, political, and administrative challenges characterized by coproduction.

Societal Challenges

Coproduction can enhance inequality within society. Coproduction brings advantage for equitable distribution of benefits and burdens of public services, as noted above. However, it can also function as a source of unequal distribution of services and burdens. Some groups are likely to participate more than the others (Kathlene & Martin, 1991; Morgan, 1987; see also Sharp, 1980). The other groups may not be willing to participate in coproduction. It has been a significant challenge to have disadvantaged groups participate in government’s production of public goods and services (Coelho, Pozzoni, & Montoya, 2005). Accordingly, citizen participation may function as a way to
promote mobilized groups (Brudney & England, 1983; Cupps, 1977; Callanan, 2005). Put differently, some groups may capture participation mechanisms and non-participating groups may become more marginalized due to the lack of participation (Callanan, 2005). Consequently, more citizen participation does not necessarily mean more democracy (Wilson, 1999). Such specialized interest-oriented participations merely reinforce existing pattern of inequalities and societal segmentation across groups with varying degrees of resources and power.

_Coproduction does not represent the general public._ Although citizen participation as a governmental policy is used to recognize the public’s will and needs, according to Reagan and Fedor-Thurman (1987), coproduction does not symbolize the general public. Although some citizen groups claim to involve ‘public interests’, they instead pursue their own wishes that do not represent the public but rather can result in “poorly conceived, unrepresentative, and costly policy decisions” (Cupps, 1977, p. 478). Thus, coproduction of public services and goods cannot replace the government’s representation but rather represent the demands and preferences of special interest groups as opposed to the collective good (Lowe, as cited in Lando, 1999), or, when coproduction is unrepresentative, its legitimacy also becomes questionable, as Cupps noted.

_Coproduction is unrealistic._ To combine the powerful and the poor in the same sociopolitical area is a challenging issue for public officials that may create an impossible consensus if the groups join together to produce public services. Accordingly,
coproduction becomes unsuccessful even when delivering adequate services to all segments of society. Further, the gap may broaden between services provided to advantaged group and services provided to disadvantaged groups.

**Political Challenges**

*Coproduction is vulnerable to interest group’s influence.* Not every resident has some type of opportunity to participate in public administration. Some groups within communities are more active, organized, and participatory than others. Some segments of the society are underrepresented (Foley, 1998). It is likely that these groups will participate in the delivery of public service. These groups are likely to promote their group interests rather than interests of community as a whole. Obviously, this mobilization may cause serious problems such as inequality and, in consequence, societal disorder. Participation of citizens from different socioeconomic groups is disproportioned. High economic groups, known as the upper class, participate more as opposed to middle-or low income groups (DeSario, 1987). That is why, Levine (1984) noted, coproduction may cause unequal distribution of services and burdens of producing these services especially when some segments of society participate and others do not.

*Diversity of thoughts in coproduction threatens reaching a consensus.* As de Lancer Julnes (2008) argued, citizens tend to focus on their immediate interests and consider their surroundings first. Similarly, Schneider (1987) noted that citizens participate in joint production and in exchange expect a return of benefits. In addition,
when some citizens participate in any type of service delivery process, they are prone to put their own benefits over those of society. Thus, balancing various interests is a substantial challenge for public officials and reaching a common consensus is not an easy task. Public agencies, stated de Lancer Julnes, can solve this problem by seeking citizen participation in only some services that require high level of citizen acceptance rather than all services. However, this tends to limit citizen participation. In this sense, one might argue that diversity among the interests of citizens poses significant problems to successful civic involvement programs.

*Coproduction sometimes involves coercion.* Although advocates argue that co-provision is based on voluntary actions and does not involve coercion, there are instances and ways in which governments use coercion to promote coproduction. As an example, public officials may refuse to give tax refunds or tax benefits to individuals who do not demonstrate certain behaviors (Neiman, 1989). This may occur in firms and companies that either force or encourage employees to attend specific governmental programs.

*Coproduction is not good enough for citizen satisfaction.* Kathlene and Martin (1991) pointed out that most citizen involvement mechanisms are not adequate instruments to inform policy makers regarding citizens’ preferences. Although some are more successful than the others, effectiveness of such mechanisms has not been consistent over time and across cities. If there is no real information sharing in coproduction, Lando (2003) intriguingly maintained, citizen-public officials interaction
tends to produce no positive results but more skepticism about the government. It can even polarize the parties that join in coproduction.

Administrative Challenges

*Coproduction is inefficient.* When citizens are involved in government actions, monetary and time constraints arise (Wilson, 1999). As well, coproduction is likely to produce administrative and political costs for local governments with respect to society’s benefits (Whelan & Dupont, 1986). Consistent with Western beliefs, substantial citizen involvement is impracticable because it is too expensive and cumbersome albeit desirable (Stivers, 1990; see also Roberts, 2004). Other scholars (Cook, 2007; Hamilton, Madison, King, & Stivers, 1998; Cooke as cited in Stivers, 1990) implied that citizens must be excluded from administrative actions even though governmental power could be derived.

*Coproduction brings new costs to government.* In a Cincinnati study Thomas (1987) argued that coproduction tends to require new spending largely due to needed adjustments to satisfy communities. It is also noteworthy that continuation of citizen involvement programs imposes additional funding for agencies. In other words, new resources are needed to ensure citizens’ participation. This is largely due to bureaucratic arrangement conducted by public organizations to obtain citizen involvement. New arrangements are also needed to change the widespread belief among public employees that citizens are not professionals and they know nothing or little about requirements of occupations. This unquestionably requires new spending and takes
time. In addition, there is no doubt that maintaining civic involvement requires additional costs and time for both citizens and public agencies (de Lancer Julnes, 2008; see also de Lancer Julnes, 2001; Kweit & Kweit, 1987).

_Coproduction creates additional burdens on governments._ The need to train and monitor volunteer non-professional citizens is another significant burden (Brudney, 1986; Mottiar & White, 2003). As such, training alone may not be adequate in ensuring that citizens contribute to the delivery of public services. Therefore, constant monitoring is needed to produce feedback that may provide valuable insights in relation to how citizens can effectively benefit the public service delivery system.

_Coproduction ignores human nature._ Some scholars assert that coproduction of public services and goods are unworkable because human beings are self-centered and flawed (Stivers, 1990). Similar thoughts, that human beings are lazy and passive, are stated by McGregor (1957) in his famous study, _The Human Side of Enterprise_. From this perspective, allowing citizens involvement in administrative functions tends to take additional burden into government.

As rational beings, citizens judge their potential benefits, loss of time, and social connections and question the likelihood that their input really makes a difference. This is especially true during the initial approval stage when participants have virtually no influence over decisions. Due to these and similar reasons, attendance and involvement in various coproduction government programs are sometimes low.
Coproduction is unworkable. In a similar fashion, Roberts (2004) argued that citizen participation can lead to tyranny of the majority as well as negatively affect public service production and delivery because services may require technical and administrative expertise. In addition, citizens do not have enough time to make informed judgments in deliberating collective interests.

Coproduction is troublesome. Stivers (1990) also criticized citizen participation. Such critics include that government is too big and complex that it is difficult, if not impossible, to have practical relationship with individual citizens, that interest group politics have filled government halls that there is no room left for ordinary citizens who are committed collective good, that too much citizens participation in government activities may threaten government’s stability, administrative standards, and day-to-day service provision to citizens (see also Roberts, 2004 for a similar discussion). Some administrative systems do not have room for active citizen participation because they heavily rely on expertise, special training, and professionalism (deLeon, as cited in King et al., 1998). Decision making in government should be in the hands of informed, expert elites because not everyone is qualified to make decision in public sphere (Roberts, 2004).

Coproduction is an organizational strategy to survive. Selznick’s (2004) argument concerning organizational co-optation indicated negative underlying premises by asserting that organizations seek citizen involvement as a survival strategy to ensure local support and approval when implementing policies and complex programs are
necessary. Coproduction, therefore, serves organizational needs rather than common citizen interests despite its involvement in some types of power-sharing. In this respect, Cheyfitz (as cited in Brudney and England, 1983) considered the efforts of public officials to include citizens in service delivery as a way to cover for bad government rather than to serve for the sake of the collective good and societal interests.

Coproduction is dangerous and involves dilemmas. Cupps (1977) claimed that coproduction, when automatic and uncontrolled, can be threatening and dysfunctional to public administration. Coproduction may also lead to shortsightedness by public officials in response to citizen demands and preferences due to frequent contact groups that pursue specialized interest for one particular group rather than for the entire community. More especially, lack of sophisticated cost-benefit analyses regarding citizens’ interests produces problems for administrative entities. Identifying specific interests common to society is at the core of this problem.

Nevertheless, according to Cupps (1977), administrators are quick to respond to mobilized groups that can lead public employees to another dangerous dilemma: serving short-term, highly-publicized, dramatic issues take priority over long-term, less visible and publicized concerns (for example, more important but less visible and debated issues are overlooked or ignored). Referred to as the dilemma between short-term versus long-term gains, some interest groups can effectively and overwhelmingly use the media and electronic devices for their own good to pressure public agencies into guaranteeing certain policy decisions and programs. Over-dramatization tactics
used by these groups poses another challenge for the government to concentrate on the real problems of society rather than those specific to particular interest groups. Such pressures and media reflections may delay administrative services for the good of society as a whole. In this sense, Thomas (1987) noted that coproduction can result in costly delays of governmental decision making and policy implementation.

*Coproduction has little impact on outcomes.* Citizens typically participate in governmental service provision after administrators, elected representatives, and consultants have identified problems and determined solutions that can solve them. However, citizen participation has symbolic meanings as opposed to a real impact on policy decisions. That is, rarely does citizen input change the outcome (Timney, 1998) because to sway government decision makers is a significant challenge (Levine, Fung, & Gastil, 2005).

*Coproduction depends on the support of officials.* Voluntary public service provision requires support from government agencies (Brudney, 1986; Mottiar & White, 2003; Rosentraub & Warren, 1987) as well as public administrators related to training and supervision activities. By the same token, if municipal employees do not support citizen involvement in the production of municipal services, coproduction is more likely to create problems and become a burden to government (Rosentraub & Warren, 1987). Existing research showed that public administrators tend to have a pessimistic attitude toward citizens and their impact on public service (Melkers & Thomas, 1998). This also
poses new challenges to establish effective partnership of residents of neighborhoods and public officials.

Kathlene and Martin (1991) also stated that most obstacles are out the citizens’ control given that public officials make decisions regarding practically most, if not all, issues related to the delivery of services, including for example, the following: information provided to citizens, types of participation programs to be employed, when programs are to be applied, the impact of citizens on decision making, and whether citizen input makes a difference in policy choices. These observations may decrease the public’s willingness to become actively involved in working with the government and its employees.

Accordingly, attitudes of public officials are critical in the successful outcome of civic participation programs. Tensions between citizens and public employees emerge due to civic engagement in government agencies (King et al., 1998; Morgan, 1987). Therefore, to reiterate, positive attitudes are critical for public officials in promoting collaboration of production and delivery of public services that will produce promising results. As DeSario and Langton (1987) stated, contributions from citizens vary according to public officials’ attitudes and the nature of policy consideration. Otherwise, the unwillingness of public employees to include citizens may result in turmoil, or even worse, policy disasters.

Coproduction may cause distrust. Notably, de Lancer Julnes (2008) maintained that public administrators must be assured that engaged citizens believe that their input
in coproduction is truly valuable and appreciated. Otherwise, citizens will perceive that their involvement is meaningless, and as a result, they will not contribute as frequently as they should. Further, they will most certainly develop a sense of distrust for public officials and, ultimately, the government.

_Coproduction is not practical._ Callahan (2005) maintained that citizen participation in government decision-making is impractical due to several reasons. First, the continuity and institutionalization of participation mechanisms are difficult (see also Gray & Chapin, 1998). The high financial costs, as stated above, also challenges practicality of participation. In addition, not all issues can be discussed with citizens. Some issues are complex. Some need expertise. When large number of people participates, moreover, decisions may become superficial. Also, bureaucracy tends to oppose greater participation.

Obviously the debate about impacts of citizen engagement in government seems to continue for a while. Arguments about its drawback seem not to be groundless. There are evidences that when citizens participate in government, some costs arise. However, benefits of coproduction of public goods and services seem to exceed potential problems of such collaboration. A detailed literature review shows that when public officials collaborate with residents of communities, citizens, communities, public agencies, public employees, and the government—particularly local governments—have gains.
Reasons of Adopting Citizen Involvement Programs

According to Langton (1978), citizens of the United States have witnessed growing alienation, distrust, and withdrawal in terms of increased citizen-based interest groups and organizations as exemplified by the continuous weakening of voter turnout rates, public confidence in government, and political party affiliations. Although government is assumed to be responsible in taking steps toward collective interest, soliciting citizen involvement has been considered by some as a possible solution for the problems between government and citizens. Thus, the demand for active civic engagement originated from public officials and citizens.

The community involvement movement was followed by legislative initiatives that mandated citizen participation in various policy programs and government actions. Public involvement’s increasing popularity led Almond and Verba (cited in Langton, 1978) to declare that “if there is a political revolution going on throughout the world, it is what might be called the participation explosion” (p. 2). Langton continued by noting that citizens in today’s local and federal governments function as dynamic and diverse contributors in government through citizen involvement mechanisms.

Indeed, some have argued that citizen-government involvement is a result of the civil rights movement and political activism during the 1960s aimed to grant more power to the poor and traditionally disadvantaged groups (Langton, 1978; see also Skocpol & Fiorina, 1999). With the intention of becoming an integral part of society rather than an alienated segment, these and other such movements gave rise to the
poor and minorities’ rights to be publicly heard. As Langton asserted, the substantial emphasis placed on openness, accountability, and responsiveness gained increased interest among citizens to actively participate in public agency activities. Specifically, public officials’ willingness to inform citizens was promoted with the purpose of eliminating “civil disinterestedness” (as termed by Behn, 1998) and thereby join citizens and officials together in government planning and decision making.

Civic engagement in the production and delivery of public service has, no doubt, increased. According to Church and colleagues (2002), civic engagement can be considered as an attempt on the part of public employees to respond to the popular and media-promoted view that government agencies are unresponsive to citizen needs and demands as well as unaccountable to citizens, owners of the government. Civic engagement mechanisms function to control government and its conduct in addition to incorporating public policy making (Julian, Reischl, Carrick, & Kathrenich, 1997; Reagan & Fedor-Thurman, 1987). Although there is very little evidence to support these assumptions, the basic rationale behind encouraging citizens to become involved in government agencies is they are, for the most part, willing to participate that, in turn, leads to better decisions made by government.

In this respect, Madison (as cited in Munger, 2000) noted that human nature is worth considering because individuals in government are fallible, tend to pursue their own ambitions, and are less likely to relinquish their power for the sake of citizens and public service. Because human nature is self-oriented, citizens should thus preserve
control over government personnel. In this respect, citizen participation can serve as an important management tool over public administrators.

According to Denhardt and Denhardt (2000), public administrators must ensure that citizens actively engage in group activities in an effort to become a part of the community and civil society. In addition, citizen participation is believed to have an impact on agency services toward an organization’s more effective and efficient performance (Sewell & Phillips, 1979). Equally, civic engagement is considered as an effective tool for more effective implementation of organizational goals (Mazmanian & Nienaber, 1979). Accordingly, organizations that promote public involvement in activities and policies will stand a greater chance of successfully implementing their goals.

The literature basically provides two rationales regarding why governments are increasingly adopting public participation programs. The first reason for the increased citizen participation, Langton argued (1978), is that the decline of mediating institutions between citizens and government such as political parties and church increased the distance between the government and citizens. In addition, increase in bureaucratic decision making jurisdictions made citizen overview of officials’ large discretionary power necessary. Media reflection of government moreover worsened the problems between citizens and the public administration. Citizen-government gap clearly was widened. Public participation mechanisms, obviously, are needed to mediate the distance between citizenry and the government.
Second crucial rationale for the popularity of citizen participation is the rise of democratic values (Rosenbaum in Langton, 1978; see also Ethridge, 1987; Reagan & Fedor-Thurman, 1987). Citizens are no longer a voting machine from elections to elections. Rather, they participate in government and provide inputs for policy actions and government actions. They provide legitimacy for the governmental actions and policies. Public officials, therefore, tend to include citizens in government decision-making.

According to Wang (2001), there are various reasons why government agencies employ citizens in the decision making process. First, citizens insist on participating because they are the owners of government (see also Denhardt & Denhardt, 2000; Pegnato, 1997; Ventriss & Candler, 2005). As well, due to government’s increased size over time, citizens want to become involved to avoid losing personal contact with government or control over public bureaucracies. Further, public administrators request assistance from citizens in an effort to reduce the number or probability of overlooked decisions.

Joining citizens with government has been a supported philosophy within public administration, and the existing legal and administrative infrastructure provides a convenient basis for citizen involvement programs. As Bingham, O’Leary, and Nabatchi (2005) suggested, with respect to citizens’ demands, the government needs innovative practices in a changing world, and public agencies need to employ new practices as well, namely consensus building, deliberative and collaborative democracy, and conflict
resolution that requires citizen participation. Further, public administration has repositioned itself from the chain of command role to that of theoretical communication and cooperation (Frederickson, 1999). Accordingly, a new approach in service provision requires teamwork within the government and between citizens and government officials that inevitably fosters legitimacy in decision making and develops a sense of harmony among citizens (see for example, Lazin, 1996; Morrissey, 2000). These and other such activities are vitally important for public administration given that all public decisions, implementations, and practices involve some level of conflict among interested segments of society.

New practices are critical in solving conflicts and developing consensus among concerned parties because citizen involvement increases fairness, a sense of justice, and perceived legitimacy of public organizations’ actions. In addition, public administrators hold a unique position to voice citizens’ demands and preferences in policy making and implementation (Bingham, O’Leary & Nabatchi, 2005; de Lancer Julnes, 2008). Accordingly, public employees may ensure collaborative actions of citizens and agencies, and a horizontal rather than a vertical relationship may be developed between government and citizens. Or, in the words of Mary Parker Follet, a top management theorist, consultant, and pioneer in the fields of public administration, human relations, and psychology: “power with” is preferable to “power over” within the labyrinths of government.
Community involvement indicates not only communication of public preferences and influencing decisions but also assists in the implementation of policies for the public’s common good. Additionally, citizen participation in public administration provides individual benefits as well as collective benefits. For example, individuals who participate in neighborhood safety may protect the well-being of communities as a collective benefit as well as raise property values as an individual benefit (Marschall, 2004).

Also important to note, citizen participation provides benefits for public organizations through frequent citizen contacts that function as a mechanism for recruiting other individuals. In addition, civic engagement eases the dissemination of information pertaining to vital local events. Further, research reveals that citizens who have contact with public officials are more likely to be aware of societal and local issues, including neighborhood safety (Marschall, 2004).

Public organizations should be more responsive to citizen demands as well as equally responsible for pursuing efficient and effective bureaucratic values. Thus clearly, public officials are faced with a dilemma: to be responsive to citizens’ preferences and ideas or to pursue organizational goals. Increasingly, public administration literature suggests that the theory of coproduction can mitigate the dilemma by providing institutional arrangements that assure citizen participation in service provision and delivery (Pammer, 1992). Therefore, the service providers, public administration, and
service recipients, citizens, may all develop positive attitudes toward one another, the basic model that contains the key principles of coproduction’s theory.

Public agencies also benefit by engaging citizens in terms of envisioning the future for their community and organizations (Ziegenfuss, 2000). For instance, citizens with diverse perspectives and backgrounds provide a unique source to plan the future of their neighborhoods as well as the country (see for example, Davis & Ostrom, 1991). Citizens’ input regarding policy results and desired solutions concerning societal problems assist public agencies to envision and design the future actions and structures (see also Church et al., 2002).

In summarizing the reasons that governments encourage citizens to participate in public service production and delivery, Parkinson (2004) outlined the following that all serve as a fundamental basis of government-community partnerships: involving ordinary citizens in daily and direct contact with local decision makers; providing citizens a unique opportunity to make difficult allocation decisions; allowing the presence of coproduction advocates in the policy making process; the legitimate effect of civic engagement in justifying government’s collaboration with citizens; citizens’ capacities to solve policy problems and test decisions at the micro level before they are publicly put into effect at the macro level; and preventing potential polarization in policy debates.

Ostrom’s argument (as cited in Schneider, 1987) concerning the necessity of voluntary citizen involvement in the production of public goods is vitally important because neither the private nor the public sector is capable in meeting the demands and
needs of citizens. “Voluntary action by citizens in providing for the common welfare of the fellow citizens has a place in democratic societies which can never be fully replaced by paid functionaries” (in Schneider, 1987, p. 612). Accordingly, voluntary citizen engagement in government and coproduction represents an indispensable element in democratic governments.

Clearly, there are a variety of motives for the government’s willingness to collaborate with citizens in the production and delivery of public goods and services. As discussed, these may include overcoming distrust, preventing citizen-alienation, and answering to the rise of democratic values. In addition, citizens are welcome to become involved in government, and as owners of the government, citizens demand to participate in decision making in an effort to control bureaucracy and influence decisions that affect their daily lives. In this respect, citizen involvement provides legitimacy for the government’s actions. Direct and open communication between citizens and public officials can also be accomplished through citizen involvement mechanisms. Government agencies also become more responsive to citizens’ demands and preferences.

Evaluation of Citizen Involvement Programs

In the United States, local governments apply a wide variety of civic involvement mechanisms in the production and delivery of public services; however, the degree of involvement varies. Wang (2001) found that cities do not consent to the idea of citizens making important management and service delivery decisions with respect to potential
benefits, that include more satisfaction in demands and needs as well as building a consensus relating to organizational goals and priorities. Thus, citizens tend to be attracted by involvement even though they play a limited role.

Wang further concluded that cities utilize citizen involvement primarily in the areas of public safety, education, and planning. Coproduction is also greater in cities that characteristically have more political divisiveness since decision makers seek to legitimize their decisions in these settings. Obviously, when public employees are willing to become accountable for their decisions and actions, the public is encouraged to participate in the production and delivery of public service. Otherwise, government employees’ fear of losing power and control may possibly reduce the likelihood of implementing citizen involvement programs. Wang also argued that citizens are not inclined to pay more through participation, and similarly, civic engagement does not necessarily lead to greater public trust in government, or, in other words cynical citizens tend to remain skeptical.

According to Pammer (1992), the theory that coproduction enhances democratic values can also be affirmed in that conjoint responsibility between citizens and public officials is necessary in promoting responsiveness and equality. In this respect, citizen participation meets the demands of bureaucracy by assisting public organizations in becoming efficient and thus reducing uncertainty.

Coproduction also meets the needs of public organizations (Pammer, 1992). Although not claimed to be an ultimate solution to public service problems, still
coproduction significantly benefits public officials. For example, Pammer found that its applicability depends largely on public administrators. For example, if they believe that civic deliberation will contribute to the efficiency and constancy of standard operating procedures, administrative arrangements for coproduction are likely to take place. On the other hand, if the community’s impact on efficiency is less than expected, opportunities for citizen participation tend to decline.

According to Brudney and England (1983), civic engagement in the joint production between citizens and public officials produces positive results. Other researchers (see for example, Schneider, 1987; Tavits, 2006) also provide evidence that citizen involvement increases the quality and quantity of delivery of services and significantly reduces costs (Pammer, 1992).

Conversely, in a study conducted on the use of home energy, Neiman (1989) found that coproducing neither undermines the importance of government intrusiveness nor weakens the necessity of direct governmental involvement in service provision. Neiman further indicated that voluntary citizen actions do not necessarily decrease government expenses in producing public services, and as well, citizen participation in energy savings activities do not guarantee conservation. In addition, energy use by voluntary citizens was not diminished through the civic engagement program. Neiman determined that in order to maintain a successful partnership, a large portion of citizens must participate which requires high costs; otherwise, change in government service delivery appears to be unachievable.
Similarly, in research conducted on neighborhood programs in Cincinnati, Ohio, Thomas (1987) maintained that citizen involvement in government does not guarantee a decrease in spending with respect to productivity gains. Quite the contrary, expenses apparently increase. In addition, public officials were observed to be unwilling to delegate service responsibility to participating neighborhoods (see also Wang, 2001). Hence, benefits of coproduction rely on increased service levels as well as government’s responsiveness to neighborhood needs and concerns (see also DeSario & Langton, 1987; Mottiar & White, 2003). Accordingly, the debate as to whether coproduction increases or decreases expenditures continues, and a consensus has not been reached among scholars concerning the impact of community involvement on government agencies’ efficiency.

Despite that numerous civic engagement programs have been established since the late 1960s (Rosentraub & Warren, 1987) in an effort to include citizens into the decision making process, few have survived or been proven successful. Quite the opposite, some programs have worsened relationships between public employees and residents, and serious conflicts between government officials and citizens have been noted. However, this does not suggest that citizen participation should be avoided but rather that public employees should focus on why programs failed and how successful citizen involvement in the production of municipal services can be achieved.
Conclusion

In general, views of scholars about citizen engagement in government apparently tend to be positive (Reagan & Fedor-Thurman, 1987; Ziegenfuss, 2000). That is, scholars have supported citizen engagement (Reagan & Fedor-Thurman, 1987; Ziegenfuss, 2000) and maintained that government agencies become stronger through citizenry involvement. Based on the assumption that “no government can be efficient and equitable without considerable input from citizens” (Ostrom, as cited in Marschall, 2004, p. 242), a positive side of joint production remains to be shared among practitioners, politicians, and scholars.

Therefore, many public agencies have been trying to include citizens in their decision-making processes. For example, public agencies in the fields of housing (Bratt, 1987), environmental policy (Ethridge, 1987), social planning (DeSario & Langton, 1987), economic development (Sullivan, 2004), urban planning (Hendricks, 2005), health planning (Perlstadt, Jackson-Elmoore, Freddolino, and Reed) and health care (McBride and Korczak, 2007), public-land use planning (Irland, 1975), and education (Morgan, 1987) innovate citizen involvement mechanisms, whereby they collaborative for the good of society. Law enforcement is another field that welcomes citizen participation.
CHAPTER 5

COMMUNITY INVOLVEMENT IN POLICING

Introduction

Crime has been one of the most important and debated issues in the United States (Donziger, 1996; Walker, 2001) that is largely assumed to be a major problem that is only worsening (Kappeler & Potter, 2005). The media strongly portrays television crime stories through numerous productions, namely, *Without Trace, America’s Most Wanted, CSI*, to mention a few, law enforcement warns against strangers, sex offenders, serial killers, violent criminals, and the list goes on. Still, fear of crime has become one of the most visible characteristics of American society that has led practitioners, the media, politicians, and the general public at large to search for effective means in preventing and reducing the problem. Although expenditures to fight crime have been drastically increased, and although citizens are willing to spend more (Hochschild & Scott; Warr as cited in Marshall, 2004; see also Cohen, Rust and Steen, 2006), prevention efforts do not guarantee success.

Further, traditional policing techniques, as Martin and Brinn-Feinberg (2001) emphasized, are not sufficient to fight crime (see also Brogden, 1999), and merely recruiting more police officers will not necessarily solve the serious problem (Gultekin, 2006). Similarly, improvements in police resources have had no significant impact on crime prevention (Hughes, 1998). Thus, out of necessity, public policy must concentrate
on new techniques beyond traditional methods to make the public feel safe. Because the police are not the only actors responsible in crime prevention, involvement of the citizenry is also required to be successful to prevent and clear crimes.

According to Herbert (2006) and Feldman (2003), neighborhood residents have historically been concerned about crime and criminals and have therefore searched for more secure areas with lower crime rates. Community involvement in crime control efforts can prove to be a good source in the fight against crime and criminals (Yin as cited in Levine, 1984). In this context, the theory of coproduction provides insight on ways to promote safer streets by implying that enthusiastic public organizations may ease the war on crime through more citizen involvement as opposed to excessive spending. For the most part, community residents are assumed to be effective and sometimes, perhaps, even more than are professionals due to the belief that they are typically understood to be more aware of neighborhood crime (Olson & Dzur, 2004). Thus, lessening crime depends on increasing civic engagement (Marschall, 2004). In particular, Levine (1984) argued that fear of crime and criminals are more likely to motivate residents to participate in collective action with public agencies than other societal problems. Taking into account the steadily decreasing budgets of police organizations, providing increased support from residents through coproduction is essential. As Schneider (1987) pointed out, the joint production of safety represents a drastic departure from the traditional policing approaches to democratic and participatory crime prevention efforts.
Law enforcement officials and neighborhood residents share a common concern for making neighborhoods safer (Duffee et al., 2006; Herbert, 2006; see also Feldman, 2003). Due to rising crime rates and fear of crime in the United States, urban areas have forced citizens to become more concerned about public safety and social order. Through this belief, community-police partnerships can, perhaps, provide safer and orderly neighborhoods (Duffee et al., 2006; Wells, Schafer, Varano, & Bynum, 2006). In terms of security, coproduction ranges from individual efforts of installing alarms and extra lights to group efforts, namely Neighborhood Watch programs (Percy, 1987). That is, citizens either attempt to fight against crime and criminals alone or conjointly address crime prevention. Regardless of types of crime prevention efforts, actions taken to increase security involve coproduction of policing services. Whether individual or collective, citizen participation can substantially increase resources against crime and decrease fear of crime within a community.

Law enforcement activities are characteristically conducted by local entities with cities hiring officers and chiefs, counties and towns electing their sheriffs, local and state governments funding the services, and citizens reviewing police misconducts (Morone & Kilbreth, 2003). Stated differently, legitimacy (Fowles, 1993; Morone & Kilbreth, 2003; Tyler, 2004) and funding of law enforcement agencies depend largely on the approval of local citizens (Booth & Seligson, 2005; Morone & Kilbreth, 2003).

Local characteristics are important when it comes to crime (Goudriaan, Wittebrood, and Nieuwbeerta, 2006). Notably, each neighborhood’s features and how
it is policed are closely related (Sherman, 1986). For example, there are variations in
terms of demographic, environmental, and physical characteristics with each having its
own individual uniqueness. Because local dynamics determine policing strategies, local
law enforcement can also employ community involvement initiatives.

Research provides evidence that citizens who reside in large urban areas across
the United States are more likely to take individual actions in securing their homes and
personal safety rather than participating in collective neighborhood security efforts. This
can be explained through the direct individual benefits derived when compared to
collective activities. Accordingly, since citizen-public employee collaboration can
produce individual visible benefits, more citizens are likely to participate in the
production of safety and security services. Simply, more direct benefits equates to more
participation and potential maintenance of coproduction (Percy, 1987).

Beginning since the last quarter of the 20th century, civic engagement in today’s
law enforcement agencies has augmented. Although some opponents (Wells, Schafer,
Varano, & Bynum, 2006) argue that police officials often criticize the lack of citizen
involvement, particularly in community policing, a substantial amount of citizen
involvement does, in fact, consist of efforts to prevent crime. Thus, the more that
citizens participate in crime prevention activities to produce safer neighborhoods
becomes the rationale behind community engagement (Levine, 1984).

Research reveals that aside from the monetary savings realized, active citizen
participation in policing efforts becomes an effective instrument that is more likely to be
successful than depending solely on professionals to fight crime (Marschall, 2004). In addition, building a working partnership between the police and citizens eases crime control (Herbert, 2006; Wells et al., 2006). Certainly, co-provision of safety services reduces crime (Percy, 1987; Sweeney, 1982; Ward, 1998) as well as the fear of crime among citizens (Moore & Trojanowicz, 1988) and increases the security of urban neighborhoods (Percy, 1987).

Because both law enforcement and citizens have a common concern for maintaining safe communities, residents and the police should work jointly. Marschall (2004) suggested that active citizen involvement will have a positive impact on deterring crime.

Although exercising police-community partnerships differ, the benefits derived are invaluable not only for the community but for police organizations as well in terms of achieving the ultimate organizational goals—to reduce crime and maintain a safe community. In short, community-police collaboration facilitates long-term and unrelenting public safety improvements (Dufee et al., 2006; Mottiar & White, 2003).

Community Policing

Community policing, a unique partnership between citizens and the police, allows a wide range of community involvement with the purpose of creating safety and order and controlling the spread of criminal activities (Mottiar & White, 2003; see also Oliver, 2000). The underlying premise is that tightened partnerships between residents and law enforcement can reduce crime (Herbert, 2006) and produce positive results.
(Brunschat, 2003; Moore, Trojanowicz, and Kelling, 2000; and Moore & Trojanowicz, 1988) for both community members and the police departments (Morash & Ford, 2002). However, community policing is more than a simple collaboration of citizens and government officials although such partnership is a significant aspect of community policing. According to the U.S. Department of Justice’s Office of Community Oriented Policing Services Web site, there are other elements, including teamwork with other agencies, focusing on problem-solving activities and decentralized decision making by individual line officers. Thus, community policing is a comprehensive philosophy that promotes citizen collaboration which, in turn, opens innovative justification for citizen involvement in law enforcement. However, as Tillman (2000) maintained, a long term commitment is required to establish trusted partnerships.

Community policing programs throughout the world have afforded new avenues to ensure that citizen involvement is an acceptable approach (Skogan, Hartnett, DuBois, Comey, Twedt-Ball, & Gudell, 2000) in preventing crime, apprehending offenders, reducing the fear of crime, and enhancing security (Moore, 1992). The concept has proven to be increasingly popular among local government, particularly in the United States, as well as national police forces in some countries, for example, Turkey (Gultekin, 2008).

Moore (1992) defined community policing as “an important resource to tap in the pursuing the goals of crime reduction” (pp. 131-132) that assists police in identifying and prioritizing community programs (Skogan et al., 2000). Additionally, community
members can influence police practices and policies through joint production of
neighborhood safety and a sense of well-being.

On the one hand, community involvement in policing enables law enforcement
to better understand the diverse cultures and viewpoints within a community and
develop awareness and sensitivity. On the other hand, through frequent police contacts,
citizens recognize that they are treated fairly and equally and the police are striving to
make their communities safer and more livable (West Virginia Advisory Committee,
2004). Accordingly, coproduction benefits the mutual interests of both neighborhood
residents and police agencies alike (Mottiar & White, 2003). Such a collaborative effort
could be a successful initiative to fulfill the needs of citizens and law enforcement
agencies (Morash & Ford, 2002).

Enhancing security and reducing crime represent the fundamental motivations
behind community-police partnerships (Moore, 1992), and coproduction regards
community members as the initial defense against crime and criminals. In addition, the
approach is thought to increase the number of police connections as well as boost and
enhance the quality of policing (Mottiar & White, 2003). As a coproduction instrument,
Mottiar and White also noted that community policing assists in decentralizing law
enforcement services and tends to develop innovative problem-solving tactics.

Despite that improved relationships and strong associations between law
enforcement and the community contribute to police success and enable them to
exercise their roles more effectively (West Virginia Advisory Committee, 2004), law
enforcement officials are willing to employ citizen participation mechanisms only if programs are in compliance with law enforcement conduct. This may, perhaps, account for police officers reporting the highest level of support for coproduction when citizens are involved in secondary and passive activities. In other words, when active participation occurs, conflict and misunderstandings between residents and law enforcement are likely to emerge. Essentially, the police want citizens to become involved in crime prevention as long as they do not influence the operations and conduct of police services (Rosentraub & Warren, 1987).

According to Moore (1992), the strategy of community policing has changed the foundation of police authority among community members. While traditional policing attains its legitimacy by reducing crime with respect to individual rights and liberties, community policing justifies its legitimacy by meeting citizen demands and desires. Thus, in addition to crime reduction and safety enhancement, creating harmony in society is also a basis of policing that demonstrates genuine concern with the goal of becoming more responsive. From this standpoint, Moore emphasized that community policing broadens law enforcement’s accountability. Interestingly, police agencies consider communities not only as a partner in reducing crime and enhancing safety (Moore, 1992) but as a means to tighten community bonds, or what Bellah, Madsen, Sullivan, Swidler, and Tipton et. al. (1985) calls public virtue.
Benefits of Coproduction of Safety

Coproduction in policing produces several significant results. Levine (1984), for example, stated that due to resource and personnel constraints, citizen participation may assist police organizations in attending to other important law enforcement matters besides arrests and investigations. Because participating citizens are inclined to exhibit more awareness regarding crime and its potential hazards, they may serve as invaluable in reporting crime and assisting police officers in their daily routines that will eventually accomplish a sense of neighborhood safety and contribute to forming solidarity among neighborhood residents (see also Johnson, Misner, & Brown, 1981).

Although coproduction in safety and security also reduces law enforcement expenditures, nevertheless, citizens cannot participate in policing activities that require advanced training and technological knowledge, namely apprehending suspects and collecting and analyzing forensic evidence. They can only participate in improving home and neighborhood safety through community surveillance (Percy, 1987).

Citizen-public official collaboration through community policing also enables law enforcement to employ various strategies depending of the geographic and demographic features of certain neighborhoods. One neighborhood, for example, may struggle with illegal drugs while another one may struggle with burglary. Thus, community partnerships assist law enforcement in focusing on the actual problems of a given community as well as adjusting their practices according to differences across neighborhoods.
Collaboration between citizens and law enforcement officials also provides useful feedback from citizens through constant interaction (Sherman, 1986). Citizens actively communicate with field level officers to inform them of any suspicious activities and recommend courses of action that the police might consider.

Citizen-law enforcement coproduction of safety and security also improves relationships between law enforcement agencies and residents through communicating the demands and concerns of one another. Law enforcement will learn to recognize the activities that citizens are most concerned about and, by the same token, citizens will realize the constraints involved in fighting crime. Thus, coproduction portrays an accurate representation of policing that further develops stronger police-neighborhood ties (see for example, Mottiar & White, 2003; Percy, 1987).

Costs Involved in Citizen Involvement in Law Enforcement

When community residents engage in crime prevention activities, it comes with costs with respect to benefits. Levine (1984) argued about a number of problems related to citizen involvement in policing activities. Crime displacement, for example, may occur due to successful crime prevention efforts in one neighborhood but not other neighborhoods. Criminals tend to go to insecure areas. Crime displacement can be prevented a jurisdiction-wide effort to fight crime. Making people engage in an organization is also a substantial problem because there must be some conditions to get successful participation. Those who participate must have some skills including communication and some technical skills according to the engagement type.
There also must be incentives for people to participate in public service delivery, Levine (1984) maintained. In addition, participants must exhibit independence in making decisions rather than those expected by public officials. Cooperation with public officials is another important aspect of successful civic participation. For instance, at first, citizens may enthusiastically volunteer but soon become bored and lose interest. Thus, to ensure maintenance, a variety of worthwhile tasks or incentives may be necessary, including positive feedback that recognizes their contributions.

Inequity within community leads negative consequences in safety service delivery, according to Mottiar and White (2003) and Percy (1987). This is because coproduction requires a time commitment. Income within society is not equally distributed. Similarly, free time for such activities may not be an issue in some neighborhoods but may be a big concern for others. The necessity of financial resources and time commitment in coproduction may increase disparity in safety and security across urban areas.

Percy (1987) argued that prosperous citizens are more likely to participate in coproduction of safety and security services whereas the economically disadvantaged from high-crime risk areas are less often involved yet they are the ones who need security and safety initiatives the most, but because they lack the resources, they are less likely to become involved in coprovision of safety.

When law enforcement employs citizen involvement mechanisms, agency’s operation, structure, and how employees carry out their responsibilities, are all affected
(Schafer, 2002; see also Community Policing Consortium, 2000; Riechers & Roberg, 2000). As a result, confusion and uncertainty among officers may occur causing citizen involvement to be viewed as a burden. Similarly, Ziegenfuss (2000) pointed out that domineering and authoritarian coproduction leaders may create a challenge or threat to law enforcement’s authority.

Conversely, Percy (1987) maintained that agencies can ease citizen engagement by supporting coproduction. However, administrators may be concerned that training citizens is expensive and citizens may not take their responsibilities seriously. Similarly, because policing is an occupation that requires professional training that citizens do not possess, police administrators and officers may portray an unenthusiastic attitude and sense of resistance toward coproduction of policing services. In short, all of these concerns may affect the implementation of citizen involvement (Brudney, 1986; Mottiar & White, 2003; Rosentraub & Warren, 1987).

Results of Citizen Involvement in Law Enforcement

As previously discussed, although there are drawbacks involved when implementing a successful citizen involvement program, the benefits often outweigh the costs, including decreased expenditures, improved citizen-agency relations, and creating more secure neighborhoods. Thus the theory of coproduction has potential for controlling crime and ensuring public order (Wells et al., 2006). Partnerships decrease the level of reliance on the police for increasing community order and safety as evidenced by improved safety that encourages citizens to participate in greater
numbers (Schneider, 1987). In addition, citizen involvement prevents the violation of individual rights in a pluralistic community (Mottiar & White, 2003).

In short, the literature reveals that citizen participation significantly influences government work. When community members and public employees join together, in public service, a number of benefits arise including an increased quality and quantity of services, satisfaction and contributions among residents, tightened community bonds, more legitimate governments, effective and efficient public organizations, a sharing of burdens, and improved decision making.

Research Questions and Hypotheses

Although there is a considerable amount of research regarding community in government and the production and delivery of safety and security, insufficient attention has been directed as to how citizen involvement may, if any, affect organizational effectiveness and organizational efficiency. Thus, the question becomes: Does civic engagement affect law enforcement’s organizational effectiveness and efficiency? Because no known research has measured the effect of citizen involvement in the production of safety and security, a comprehensive analysis is needed to fill this gap.

Accordingly, to measure the impact of civic engagement on police organizational effectiveness and efficiency, this researcher developed a citizen participation index for cities and employed a number of variables along with citizen involvement. Statistical
analyses were then applied to determine if citizen involvement does, in fact, affects police efficiency and effectiveness.

To examine the impact of citizen involvement on law enforcement agencies, a number of minor questions, as well as major ones, and hypotheses were developed to determine the relationship between organizational efficiency and effectiveness and citizen involvement in policing. Factors consisting of agency budget, police officer ratio, police vehicle ratio, and per capita income are used and controlled to identify the impact, if any, that citizen participation has on crime prevention and clearance rates.

Research Questions

Major Research Questions

1. Does citizen involvement affect law enforcement organizational efficiency?
2. Does citizen involvement affect law enforcement organizational effectiveness?

Minor Research Questions

1. Does citizen involvement affect crime rates?
2. Does citizen involvement affect crime clearance rates?
3. Does police officer ratio to city population affect level of citizen involvement?
4. Does agency budget affect level of citizen involvement?
5. Does per capita income of the cities affect citizen involvement?
6. Does police vehicle ratio affect citizen involvement?

Hypotheses

H₁: Citizen involvement is positively related to organizational efficiency of law enforcement agencies.

H₂: Citizen involvement is positively related to law enforcement effectiveness.

H₂-a: Citizen involvement is negatively related to crime rates.

H₂-b: Citizen involvement is positively related to crime clearance rates.

H₃: Citizen involvement is greater in cities having a higher ratio of police officers to population than in cities having a lower ratio of police officers to population.

H₄: Citizen involvement programs are greater in cities having a higher ratio of police vehicles to each city in proportion to population.

H₅: Citizen involvement is higher in cities with greater per capita income than in cities with lower per capita income.

H₆: Police agencies in cities with higher agency budgets are likely to have more citizen involvement programs than in cities with lower police agency budgets.

H₇-a: Police officer ratios to cities’ population are negatively related to organizational efficiency of law enforcement agencies.

H₇-b: Police vehicle ratio is negatively related to organizational efficiency of law enforcement agencies.
H7-c: Agency budget is negatively related to organizational efficiency of law enforcement agencies.

H8-a: Police officer ratios are negatively related to crime rates.

H8-b: Police officer ratio is positively related to crime clearance rates.

H9-a: A police vehicle ratio to each city in proportion to population is negatively related to crime rates.

H9-b: A police vehicle ratio to each city in proportion to the population is positively related to crime clearance rates.

H10-a: Agency budget is negatively related to crime rates.

H10-b: Agency budget is positively related to crime clearance rates.

H11-a: Per capita income is negatively related to crime rates.

H11-b: Per capita income is positively related to crime clearance rates.

H12-a: Police officer ratio to city population has a stronger effect on organizational efficiency than citizen involvement.

H12-b: Police vehicle ratio to each city in proportion to population has a stronger effect on organizational efficiency than citizen involvement.

H12-c: Agency budget has a stronger effect on police organizational efficiency than citizen involvement.
H₁₃-a: Police officer ratio to city population has a stronger effect on crime rates than citizen involvement.

H₁₃-b: Police vehicle ratio to city in proportion to population has a stronger effect on crime rates than citizen involvement.

H₁₃-c: Agency budget is more significant than citizen involvement in lowering crime rates.

H₁₃-d: Per capita income is more significant than citizen involvement in lowering crime rates.

H₁₄-a: Police officer ratio to population has a stronger relationship on crime clearance rates than citizen involvement.

H₁₄-b: Police vehicle ratio to city in proportion to population has a stronger relationship on crime clearance rates than citizen involvement.

H₁₄-c: Agency budget has a stronger relationship on crime clearance rates that citizen involvement.

H₁₄-d: Per capita income has a stronger relationship on crime clearance rates than citizen involvement.

Citizen involvement is believed to produce several significant benefits for governmental organizations and communities as well as political benefits. Law enforcement agencies are, in the same way, believed to benefit from collaboration with citizens in preventing crime and apprehending criminals. The hypothesized
relationships between law enforcement organizations and citizen involvement will be tested through a number of statistical techniques and results will be discussed in the following chapters.
CHAPTER 6
RESEARCH DESIGN, METHODOLOGY, AND DATA

Introduction

To investigate the impact of citizen involvement in policing on organizational effectiveness and efficiency of law enforcement agencies, public safety coproduction tools are examined. Any type of mechanism that provides an opportunity for citizen-public officials to collaborate for the provision of policing services is considered to be an instrument for coproduction.

A review of the literature failed to analyze if citizen involvement in the production of safety has an effect on the organizational efficiency and effectiveness of law enforcement agencies. This research, therefore, examines the impact, if any, in an effort to determine if citizen involvement tools can make a difference which will, in turn, contribute to the scant literature pertaining to organizational efficiency and effectiveness.

Three models were developed to answer the major research questions: Does civic involvement affect law enforcement’s organizational effectiveness, and does it affect organizational efficiency? Based on quantitative research, the first model initially addresses the question by utilizing data envelopment analysis (DEA) in which an agency’s budget, police officer ratio, and police vehicle ratio are considered inputs while crime rates and crime clearance rates represent outputs. Known as a widely used
technique, DEA was therefore the analysis chosen to measure the efficiency of organizations. Second, a citizen involvement index was developed for U.S. cities comprised of a population of 100,000+. Third, ordinary least square (OLS) regression was run by using the citizen involvement index as an independent variable and agency budget, police officer ratio and police vehicle ratio as control variables. The dependent variable in OLS regression was the efficiency scores of each city police department found through DEA. Through the first model, the impact of citizen participation on police efficiency is analyzed.

The second and third models of the study, also based on quantitative approach, aim to measure whether citizen involvement makes any difference on law enforcement organizational effectiveness. I used ordinary least square regression (OLS) to measure the impact of citizen involvement index—the independent variable—and control variables consisting of police officer ratio, police vehicle ratio, agency budget, and per capita income on interval-ration dependent variables, crime rates and crime clearance rates.

The second and third models are developed to model police effectiveness since, as mentioned in the previous chapter, law enforcement effectiveness is closely related to crime rates and crime clearance rates. Accordingly, two different models, one for crime rates and one for crime clearance rates, are developed. Crime rates are used as the dependent variable of the second model along with independent variable, citizen involvement, and a number of control variables including police officer ratio, police
vehicle ratio, agency budget, and per-capita income. The third model uses crime clearance rates as dependent variable and citizen involvement as independent variable along with a number of control variables including police officer ratio, police vehicle ratio, agency budget, and per-capita income.

An extensive review of the literature revealed that research is scant in providing a common measurement of community involvement in law enforcement. Therefore, the researcher developed a comprehensive citizen involvement index to determine whether community involvement has an impact on local policing services.

The following techniques employed in this research were widely used in the existing literature with respect to varying results. Quantitative data were used to measure the relationship between citizen involvement in the production and delivery of safety and security and the success of law enforcement agencies in local government concerning crime rates and crime clearance rates and organizational efficiency. All three models utilized the citizen involvement index as an independent variable to measure organizational effectiveness and efficiency, and secondary data were used to obtain and calculate needed data.

Definition of Terms

Efficiency: There are basically two types of efficiency: technical efficiency and allocative efficiency (Ferris, 1984). Technical efficiency refers to maximizing output for a given quantity of supply or producing a given amount of output with the least amount of inputs. Accordingly, output can be maximized or increased without any increase of...
inputs, and by the same token, output can be increased even if input is decreased. Technical efficiency centers on supply and output relationships to produce as much output as possible with a given amount of input. Typically used to refer to cost effectiveness, technical efficiency is a situation where given the expertise, it is impossible for an organization to produce a larger output from the same inputs or the same output with less of one or more inputs without increasing the amount of other inputs.

Allocative efficiency refers to the circumstances that an existing arrangement of resources cannot be changed but rearranged so that those who benefit from the rearrangement of resources compensate the losers (Ferris, 1984). Rearrangement makes at least one person better off but no one worse off. Although technical efficiency is necessary for allocative efficiency, it is not solely enough to accomplish allocative efficiency, a situation in which an organization’s limited resources are allocated in accordance with the wishes of consumers.

This research centers on technical efficiency to measure whether citizen involvement is cost effective for law enforcement agencies. Because citizens provide their time and voluntary labor free of charge when they engage in joint coproduction, their input does not cost anything other than expenses for initial training which is expected to lead to more output, or in this case, more public service within a given budget. In other words, public organizations receive free input without spending government resources. Because joint production of public goods and services has the
capacity to produce government efficiency, citizen involvement is hypothesized to be
cost effective for law enforcement organizations. Technical efficiency will be measured
to test the hypotheses.

Effectiveness: There are numerous approaches and ways to achieve organizational
effectiveness (Levin & Minton, 1986). Although various schools in public administration
have adopted different approaches, for the purpose of this research, effectiveness
refers to “the ability of the organization to minimally satisfy the expectations of its
strategic constituencies” (Miles, as cited in Levin and Minton, 1986, p. 520). According
to Salancik (1984), an organization can be considered effective when outcomes meet
the preferred results by its stakeholders. Organizational effectiveness is “an external
standard of how well an organization is meeting demands of various groups” (Pfeffer &
Salancik, as cited in Levin and Minton, 1986, p. 524). Thus, organizational effectiveness
depends on the achievement of projected outcomes. Accordingly, this researcher uses
the term effectiveness to refer to a police agency’s ability to meet the demands from
owners of the government – the citizens.

Moore (1992) stated that crime control has by far been the most important if not
the only objective of policing. Because law enforcement is expected to prevent crime
and apprehend criminals, the predictable outcomes of policing are, therefore,
preventing crime and arresting criminals. Therefore, in reality, effective law
enforcement practices should decrease crime rates and increase crime clearance rates.
This research implies that police effectiveness is determined by low crime rates and high
crime clearance rates. Coproduction of safety and security was expected to result in effective police agencies in crime prevention.

Modeling of the Impact of Citizen Involvement on Organizational Efficiency

The first model, Model 1, of this research hypothesizes that citizen involvement is positively related to police organizational efficiency, or, if civic involvement increases, organizational efficiency of law enforcement agencies increases. The literature largely maintains that civic involvement provides free labor for public organizations, and therefore, citizen involvement is positively related to organizational efficiency. Under the presumption that costs in government production and delivery of services and goods will decrease, citizen involvement will lead to efficient public entities. Citizen involvement is also assumed to lead the police to focus on real community concerns that will result in cities with greater civic involvement being more likely to have smaller budgets than those with fewer community partnerships, which eventually result in more efficient organizations.

To measure the impact of citizen involvement on law enforcement organizational efficiency, first, Data Envelopment Analysis (DEA) was applied. Having located efficiency scores of police agencies of the U.S. cities with a population of 100,000+, the impact of citizen involvement on these scores was determined through Ordinary Least Square (OLS) Regression Analysis.
Research Techniques Utilized

Data Envelopment Analysis (DEA)

Data Envelopment Analysis (DEA) is a type of linear programming that provides frontier estimation (Choi, 2005) and represents a “non-parametric technique in the sense that it does not require the specification of an underlying cost or production function with which to characterize the translation of inputs into outputs” (Drake & Simper, 2003), and is capable of using multiple inputs at the same time (Olshfski & Puran, 1999). Interaction between inputs and outputs is at the core of efficiency analysis that has been used by various scholars (Drake & Simper, 2005; Nyhan & Martin, 1999; Olshfski & Puran 1999; Sun, 2004). Data envelopment analysis is a very effective and simple method to measure the efficiency of both non-profit and for-profit organizations. Winston and Allbright (2001) argued that:

traditional techniques used to identify and promulgate best practices are not very effective, largely because the operations of service organizations are too complex to allow accurate identification of best practices. Data envelopment analysis can help because it provides an objective way to identify best practices in service organizations and has consistently generated new insights that lead to substantial productivity gains that were not otherwise identifiable. (p.162)

In addition, DEA is a nonparametric technique used to assess the relative efficiency of law enforcement departments. Parametric techniques are difficult to apply requiring input price data that are not readily available for public service organizations (Drake & Simper, 2005; see also Diez-Ticio & Mancebon, 2002; Drake & Simper, 2002; Nyhan & Martin, 1999; Thanassoulis, 1995), and frequent application of the DEA
method does not require “knowledge of the underlying functional form for the cost or production function” (Drake & Simper, 2005, p.470). Only the relevance between inputs and outputs across the decision making units are required. Therefore, DEA was the method chosen for this research.

Frontier Analyst Software, produced by Banxia Software, was utilized due to its flexibility in entering data, a large number of decision making units, and ease of use. In addition, Frontier Analyst offers useful information pertaining to which decision making units should be improved since it provides input minimization throughout the analysis.

**Ordinary Least Square (OLS) Regression Analysis**

Ordinary least square regression (OLS) has been applied by the scholarly community to measure parameter estimation of relationships between variables (Pavelescu, 2004) with the main goal “to model or group variables that best predict a criterion [dependent] variable” (Mertler & Vannatta, 2005, p. 194). Ordinary Least Square Regression can be employed when the level of measurement of the dependent variable has an interval ratio or ordinal with five or more categories and if there is more than one independent, and/or control variable. When measuring the impact of one variable on another, OLS is especially useful (see Stronge, Ward, Tucker, & Hindman, 2007). In addition, OLS allows using a control variable to account for spurious relationships between the independent and dependent variables (Luehlfing, Copley, & Schockley, 1995). Therefore, OLS regression was applied in this research to measure the
impact of citizen involvement on efficiency scores of police departments as measured through DEA in the first step of the model.

Variables

To analyze the efficiency of city police departments, variables used to measure police organizational efficiency were determined by a comprehensive review of organizational efficiency literature. Research revealed that existing studies typically use the number of police officers, number of police vehicles, and agency budgets as inputs. This researcher used police officer ratios due to cities with smaller populations were more likely to have fewer police officers thus making the ratio of police officers to population a better input variable. As outputs, existing research used crime clearance rates and number of crimes. Having used these inputs and outputs shown in Table 3

DEA Inputs and Outputs Used to Measure Police Efficiency

<table>
<thead>
<tr>
<th>Inputs</th>
<th>Outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Police officer ratio</td>
<td>1. Crime rates</td>
</tr>
<tr>
<td>2. Police vehicle ratio</td>
<td>2. Crime clearance rates</td>
</tr>
<tr>
<td>3. Agency budget</td>
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</table>

Table 3 to measure organizational efficiency through DEA, an OLS was run that found the dependent variable to be efficiency scores and the independent variable to be citizen participation. Some other influential factors consisting of agency budget, police
officer ratio, and police vehicle ratio were used to control their effects on efficiency scores to accurately test the impact of community-public employees’ collaboration on law enforcement organizational efficiency.

Outputs in DEA

Crime Rates. Apprehending criminals and crime deterrence are, obviously, major police duties throughout the world (see for example, Carrington et al., 1997; Nyhan & Martin, 1999; Thanassoulis, 1995) besides that of being responsible for preventing and reducing crime (Walker, 2001, Donziger, 1996). The number of crimes committed in a city serves as a significant indicator in measuring the success of law enforcement agencies. However, the number tends to depend on the city’s population that is likely to be higher in more populated cities. Accordingly, crime rates portray a clearer picture of policing success by overcoming the issue of a population’s effect by measuring the rates per 100,000 residents. Thus, when crime rates are decreased, law enforcement agencies are considered as successful, and likewise, the more successful the police, the lower the crime rates. Therefore, a city’s crime rate is considered to be a significant output of policing.

Crime rates were calculated by using the FBI’s Uniform Crime Reports (UCR) that provide monthly data on the number of crimes committed in a given city. Types of crime reported through the UCR and included in this research are murder, manslaughter, rape, attempted rape, robbery, assault, unlawful entry, burglary, larceny, theft, and vehicle theft. To determine the crime rates for each city, first, monthly data were summed up
and the total number of crimes for each city was calculated. Second, the population of each city was divided by 100,000. Third, the previously calculated number of crimes was divided by the value found in the second step. Finally, the calculation's end product equals the number of crimes per 100,000 city residents. Crime rates for each were calculated through this way.

**Crime Clearance Rates.** Crime clearance rates as related to police performance occur after a crime is committed (Darrough & Heineke, 1979; Diez-Ticio & Mancebon 2002; Drake & Simper, 2000; Nyhan & Martin, 1999; Thanassoulis, 1995), or, once any crime is committed, the police are expected to apprehend the offender(s) thereby clearing as many crimes as possible. The rate of cleared crimes is assumed to be greater in cities where police organizations successfully arrest offenders. To measure law enforcement efficiency, crime clearance rates are used as policing outputs.

Crime clearance rates were calculated in the same way as crime rates. Offenses cleared by arrest and reported through the FBI’s *Uniform Crime Reports* (UCR) include murder, manslaughter, rape, attempted rape, robbery, assault, unlawful entry, burglary, larceny, theft, and vehicle theft. To establish crime clearance rates for each city, first, monthly data of cleared crimes was summed up and the total number of cleared crimes for each city was calculated. Second, each city’s population was divided by 100,000, and third, the previously calculated number of cleared crimes was divided by the number found in the second step. The end product of the calculation equals the number of cleared crimes per 100,000 city residents.
Inputs in DEA

_Police officer ratio._ Police personnel affect the apprehension of criminals and reduce the crime rate (Carrington et al., 1997; Diez-Ticio & Mancebon 2002; Donziger, 1996; Grey, 2000; Thanassoulis, 1995; Walker, 2001). Thus, the greater number of police officers indicates greater opportunities for more patrols and increased opportunities for crime prevention and criminal apprehension. Hence, number of police officers is considered to be fundamental inputs of police departments. However, smaller cities are likely to have a smaller number of officers. To minimize populations’ impact, officer ratio to population was calculated since it could serve as a more realistic variable across cities with considerably different populations. The researcher therefore proposes that the higher the ratio of police officers to city population, the lower the crime rates and the higher the crime clearance rates. Police officer ratio is measured as the ratio between the number of police officers to a city’s population.

_Police vehicle ratio._ Darrough and Heineke (1979) maintained that a greater number of police vehicles is significantly related to mobilized police forces (see also Carrington et al., 1997; Diez-Ticio & Mancebon 2002) in responding quickly to calls-for-service that will likely result in lower crime rates and higher crime clearance rates. Considered as an input, police vehicle ratio to each city is calculated as the ratio between the number of police vehicles to each city in relation to population. The researcher postulates that police vehicle ratio to population of each city affects crime rates and crime clearance rates.
Agency budget. Budget is also of major importance (Drake and Simper, 2000, 2002; Nyhan and Martin, 1999) in recruiting and hiring officers and purchasing vehicles and a myriad of required police equipment. An agency’s budget is hypothesized to positively affect crime clearance rates and negatively affect crime rates. For the purpose of this research, agency budgets provided in the Law Enforcement Management and Administrative Statistics (LEMAS) were used; therefore, no further calculation is applied.

Independent Variable

Citizen participation. Presumably, citizen involvement is positively related to law enforcement’s efficiency through the provision of free labor (Kweit & Kweit, 1987) and decreased government expenditures (Ferris, 1984; Mintrom, 2003; Pammer, 1992) leading to higher crime clearance rates and lower crime rates. For the purpose of this research, citizen participation is therefore used as the independent variable to measure its impact on organizational efficiency through OLS regression.

A variety of mechanisms are employed to enable citizen involvement in crime prevention and provision of security services. One of the most widely applied mechanisms are citizen police academies that provide collaboration between citizens and police agencies (Raffel, 2005) in an effort to prevent crime, address societal problems, and become active participants of the larger community rather than “bowling alone” (Putnam as cited in Raffel, 2005). In addition, citizen police academies tend to produce respect and favorable attitudes toward law enforcement agencies (Raffel, 2005).
Meetings with diverse community members (for example, senior citizens, youth, business owners, neighborhood residents, religious institutions, and local public officials, and so forth) is another important tool that contributes to policing by setting priorities in the fight against crime, providing effective provision of safety and security, and strengthening ties between the police and local groups (Mesko & Lobnikar, 2005).

Citizen satisfaction and perception surveys are also valuable mechanisms in determining how citizens feel about crime (Ren, Zhao, Lovrich, & Gaffney, 2006) and law enforcement activities and efforts in their community. Agencies have used surveys on a regular basis to assess citizen satisfaction pertaining to the production and delivery of security services, identify possible gaps between provided services and citizen expectations (Donnelly, Kerr, Rimmer, & Shiu, 2006), and become familiar with citizen-police experiences in relation to police conduct (Weitzer & Tuch, 2005), among numerous other issues. These surveys, as Skogan (1996) maintained, also contribute the accountability of law enforcement to citizenry.

Citizens are also provided the opportunity to become involved in law enforcement activities through citizen complaint review boards, an appropriate forum for citizens to voice their concerns (Guzman & Frank, 2004). Through these boards, citizens are allowed to express their own opinions, criticize law enforcement, and intervene between the police and community residents (Bartels & Silverman, 2005). These boards enable citizens to affect police conducts, in consequence police performance, in their neighborhoods.
Neighborhood-oriented crime prevention units, another primary mechanism for citizen involvement and cooperation, have proved to be successful in ensuring safe urban areas and understanding the priorities expressed by residents. Neighborhood policing may well provide long-term solutions to problems through citizen feedback (Kirkby, 2006) because it enables the police develop stronger and closer ties with the residents of each neighborhood.

Community policing, as discussed earlier, is a significant mechanism in the coproduction of security and safety that permits community citizen-police involvement. Closely related to police accessibility of residents and vice versa (Mawby, 2004), law enforcement agencies closely collaborate with citizens to find solutions to local community problems by ensuring a working partnership that involves constant listening to public expectations (Sims, Hooper, & Peterson, 2002). Among the desired outcomes that community policing produces is the “perception of decreased local crime, increased perception of police performance, neighborhood improvement, and police-community relationships” (Liou & Savage, 1996, p. 163).

Law enforcement agencies also provide crime-related education in schools as another form of citizen partnership. Research has revealed that there is a relationship between educational environments and crime prevention (Limbos & Casteel, 2008) that may prove to decrease crime rates by encouraging students and school officials to develop a keen awareness about crime. The most widespread programs consist of
Table 4

Citizen Involvement Instruments in Law Enforcement

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<tbody>
<tr>
<td>1.</td>
<td>Citizen police academy</td>
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<tr>
<td>2.</td>
<td>Meetings with local government</td>
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<tr>
<td>3.</td>
<td>Meetings with religious groups</td>
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<tr>
<td>4.</td>
<td>Meetings with school groups</td>
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<tr>
<td>5.</td>
<td>Meetings with youth groups</td>
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<tr>
<td>6.</td>
<td>Meetings with senior groups</td>
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<td>7.</td>
<td>Meetings with advocacy groups</td>
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<tr>
<td>8.</td>
<td>Meetings with neighborhood groups</td>
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<tr>
<td>9.</td>
<td>Meetings with business groups</td>
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<tr>
<td>10.</td>
<td>Public perception survey</td>
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<td>11.</td>
<td>Public satisfaction survey</td>
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<td>12.</td>
<td>Civilian complaint review board</td>
</tr>
<tr>
<td>13.</td>
<td>Community policing plan</td>
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<tr>
<td>14.</td>
<td>Community policing unit</td>
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<td>15.</td>
<td>Drug education in school unit</td>
</tr>
<tr>
<td>16.</td>
<td>Citizen training</td>
</tr>
<tr>
<td>17.</td>
<td>Neighborhood crime prevention unit</td>
</tr>
</tbody>
</table>
Some law enforcement agencies provide citizen training as an effective tool of citizen involvement when police-community partnerships are planned (Brudney, 1986; Mottiar & White, 2003). Skogan and colleagues (2000) pointed out that collaboration in the production of safety training tends to be successful in securing neighborhoods. These trainings strengthen ties between citizens and the law enforcement.

As revealed, local law enforcement agencies employ diverse citizen involvement mechanisms. Therefore, to establish the degree of citizen involvement, the researcher developed a citizen involvement index for each city in the United States with a population of 100,000+. As shown in Table 4, seventeen instruments were used to determine each city police department’s level of citizen involvement. According to the number of mechanisms that each city police agency employs, the value of the citizen involvement index value was determined for each city. For example, if City A employs 13 mechanisms, a value of 13 is assigned for citizen involvement, if a city employs 17, then its citizen participation value is 17, et cetera.

In developing a composite citizen involvement index, weighing data is an important aspect in this research. Differential weights, “directly based on subject matter expert judgments, weights based on archival information (e.g., job analysis information or other related ratings), and unit weights, sum of raw scores across components as units weight” represent different ways of weighing (Bobko, Roth, & Ruster, 2007, pp. 691, 693). A review of the literature revealed that differential weight scales and unit weights are more likely to be statistically indifferent even though differential weights
are more time-consuming and involve subjective weighing of scores. Bobko and colleagues further stated that a comprehensive literature review across multiple disciplines indicates that unit weights, summed scales in which each unit has a weight of 1, provides an appropriate approach to weigh scores. The Bobko et al. pointed out that unit weights tend to be an appropriate approach to weighing values in various fields and under different circumstances. In addition, unit weights have a significant predictive validity when compared to differential weighing. Moreover, developing summed scales is “empirically logical because ... composite scores from unit weights generally correlate quite highly with more elaborately generated composite scores ... [and] conceptually logical, because each component or score is likely to have a reasonable chance to influence the overall score” (Bobko et al., 2007, p. 698).

Thus, one might easily argue that if a differential weight was used, similar results would be expected albeit developing a differential weight requires more time and resource commitment. In addition, if a differential weight had been developed, the difference between the highest and the lowest value would not have been too different since all citizen participation tools used to measure citizen participation values have an equal or similar chance to influence the processes of law enforcement. Although Bobko and colleagues argued that if the ratio of the largest to the smallest value is 10 to 1 or higher, the differential weight may be more accurate than summed scales, had a differential weight been developed for this study, the ratio of the largest to smallest
would not have been 10 to 1. Therefore, this researcher developed a unit weight –a summed scale– for the citizen involvement index of law enforcement agencies of cities.

Quantitative Data Processing

Data Envelopment Analysis (DEA). Model 1 measured each city’s police department efficiency scores through DEA by using police vehicle ratios, police officer ratios, and agency budget as inputs and crime rates and crime clearance rates as outputs. Having utilized these inputs and outputs, the efficiency scores of each law enforcement agency was found. Efficiency scores ranged between 1 and 100, with the highest score indicating the most efficient agencies and the lowest score indicating the most inefficient.

The DEA formula used in this research is:

\[
\begin{align*}
\text{Max } Z_r &= \sum_{r=1}^{s} Y_{rj} U_r \\
\text{subject to: } \sum_{r=1}^{s} Y_{rj} U_r - \sum_{i=1}^{m} X_{ij} V_j &\leq 0 \text{ (for all the other j DMUs)} \\
\sum_{i=1}^{m} X_{ij} V_j &= 1 \text{ (for the jth DMU being calculated)}.
\end{align*}
\]

In the formula, \( Z \) refers to the relative efficiency of the Decision Making Unit (DMU); \( s \) = number of outputs produced by DMU; \( r \) = number of inputs employed by DMU; \( y_i \) = the \( i \)th output produced by DMU; and \( x_j \) = the \( i \)th input employed by DMU.
Similarly, $u_i$ refers to $s \times 1$ vector of output weights, and $v_j$ refers to $r \times 1$ vector of input weights. The reader should note that $i$ runs from 1 to $s$ and $j$ runs from 1 to $r$.

*Ordinary Least Square Regression Analysis.* This research was designed to establish the impact of citizen involvement on law enforcement organizational efficiency by employing Ordinary Least Square (OLS) regression. To determine the impact of citizen involvement on efficiency scores initially found through DEA, Ordinary Least Square regression was run by using previously found efficiency scores as dependent variables where citizen involvement is the independent variable. Control variables consist of law enforcement agency budget, police officer ratio, and police vehicle ratio. Such statistical data processing provides information about whether citizen involvement affects efficiency of law enforcement agencies. Table 5 shows the organizational efficiency variables used in Model 1 through OLS.

Table 5

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Control Variables</th>
<th>Dependent Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citizen involvement</td>
<td>Police officer ratio</td>
<td>Efficiency Scores</td>
</tr>
<tr>
<td></td>
<td>Police vehicle ratio</td>
<td></td>
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<tr>
<td></td>
<td>Agency budget</td>
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</table>
Modeling of the Impact of Citizen Involvement on Organizational Effectiveness

The more citizens become involved in policing, the more effective law enforcement agencies will be in preventing crime and apprehending offenders was postulated as leading to lower crime rates. On the contrary, greater citizen involvement increases crime clearance rates. Because two different dependent variables relate to organizational effectiveness, the researcher developed two different models (Models 2 and 3) regarding the impact of citizen involvement on organizational effectiveness, both using OLS regression and the same independent variable (citizen involvement) and control variables (patrol officers ratio, police vehicle ratio, agency budget, per capita income of each city) with respect to the different dependent variables (crime rates and crime clearance rates).

Research Techniques Utilized

Ordinary Least Square (OLS) Regression

To measure the impact of citizen engagement in the production and delivery of security and safety services, Ordinary Least Square (OLS) regression analysis, also mentioned in Model 1, was employed given that this is a technique has also been used by the scholarly community to measure the impact of at least two variables on another variable with respect to the controlled effects of other factors (see Stronge, Ward, Tucker, & Hindman, 2007; Yang & Allen, 2005). Accordingly, OLS is an appropriate technique to measure the impact of citizen involvement on organizational effectiveness of law enforcement agencies across U.S. cities.
Variables

Dependent variables. To measure organizational effectiveness, two dependent variables used most frequently, nationally and internationally, consist of crime rates and crime clearance rates that are considered to be the primary policing products to measure policing effectiveness (Renauer, 2007; Silver & Miller, 2004). Organizations that experience low crime rates and high crime clearance rates are indicative of effective law enforcement agencies.

Independent variable. The independent variable, citizen involvement index, was assumed to have an impact on organizational effectiveness. Because citizen participation is thought to have a negative effect on crime rates and a positive effect on crime clearance rates, this researcher hypothesized that greater citizen participation will lead to lower crime rates and higher crime clearance rates or positively affect organizational effectiveness of law enforcement.

Control variables. In addition to citizen involvement, other factors may influence organizational effectiveness. Therefore, control variables consisting of per capita income, agency budget, police officer ratio, and police vehicle ratio are taken into account to measure the impact of citizen involvement on the determinants of police effectiveness, crime rates and crime clearance rates.

Agency budgets are believed to be influential on the effectiveness of organizations because higher budgets allow organizations to purchase needed or required equipment and hire more individuals toward desired ends. Therefore,
organizations with higher budgets were hypothesized to be more effective when compared to agencies having lower budgets. Agency budgets were provided in law enforcement management and administrative statistics; therefore, no further calculation was applied.

*Per Capita Income* is assumed to influence policing in a number of ways. For example, a review of relevant literature provided evidence that income has an impact on crime rates (Hipp, 2007) with cities having higher per capita incomes being more likely to have lower crime rates (Virtanen, Kivimäki, Kouvonen, and Eloainio 2007; see also Imrohoroglu, Merlo, & Rupert, 2006 for a discussion on the impact of income on crime). Similarly, there is evidence that neighborhood residents with higher income levels tend to participate in more public programs than lower per capita income residents (Hays & Kogl, 2007). As the literature suggests, cities having wealthier residents and higher per capita income are inclined to have more citizen participation mechanisms that is believed to result in lower crime rates and higher crime clearance rates. Per capita income values were taken from the 2000 U.S. Census Bureau Statistics for each city; therefore, no further calculations were made to develop per capita income values.

The potential impact that the police officer ratio and police vehicle ratio have on a law enforcement agency's output—crime rates and crime clearance rates—are critical in preventing crime and apprehending criminals, and thus are important in analyzing law enforcement organizational effectiveness.
The ratios of police officers and police vehicles to a city’s population may drastically affect crime rates and crime clearance rates. Thus, as hypothesized, a higher police officer ratio to population means fewer crimes and more crime clearances. Likewise, more police vehicles in cities proportionate to population indicate higher crime clearance rates and lower crime rates.

Table 6

Variables Measuring the Impact of Citizen Involvement on Law Enforcement Organizational Effectiveness through OLS

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Control Variables</th>
<th>Dependent Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Police vehicle ratio</td>
<td>2. Crime clearance rates</td>
<td></td>
</tr>
<tr>
<td>3. Agency budget</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Per capita income</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The researcher calculated crime rates as well as crime clearance rates by using the FBI’s Uniform Crime Reports (UCR) that provide monthly data on the number of crimes committed and the number of crimes cleared in cities. To locate crime rates and number of crimes cleared for each city sampled, the monthly data were first summed up and the total number of crimes and the number of crimes cleared for each city was calculated. Second, each city’s population was divided by 100,000, and third, the previously calculated number of crimes and crimes cleared was divided by the number
found in the second step. The end product of this calculation resulted in the number of crimes and the number of crimes cleared per 100,000 people in each city. Table 6 illustrates the variables used in the models of organizational effectiveness.

Quantitative Data Processing

Figure 1 graphically portrays OLS regression models used to measure the impact of citizen involvement on organizational effectiveness by illustrating the control variables utilized (agency budget, police officer ratio to city population, police vehicle ratio, each city’s per capita income), the independent variable (citizen participation). and two separate dependent variables (crime rates and crime clearance rates). These variables were analyzed through Ordinary Least Square (OLS) regression, a technique
well-known and appropriate for measuring effectiveness, in two different models, Model 2 and Model 3. Results are discussed in Chapters 7 and 8.

Data Sources

The researcher used a number of data sources to analyze citizen participation in local law enforcement services. The first, the Law Enforcement Management and Administrative Statistics (LEMAS) prepared by Bureau of Justice Statistics, Office of Justice Programs, conducted five surveys in 1993, 1997, 1999, 2000, and 2003. LEMAS is used to determine if citizen involvement had any effect on law enforcement’s organizational effectiveness and efficiency. LEMAS provided an opportunity for the researcher to develop a citizen involvement index as the surveys revealed the type of administrative programs and citizen involvement mechanisms that had been employed in each of the selected cities. Data regarding number of police officers, number of police vehicles, and agency budget were derived from the 2003 LEMAS survey that collects and provides data consistently across all cities in the United States.

This researcher gathered LEMAS data through the Inter-university Consortium for Political and Social Research (ICPSR), one of the world’s largest Web-based data sources of social sciences since 1962. The source has an abundance of original social sciences research data that is provide for researchers who require secondary data. The consortium served as a unique source for this researcher to collect all data needed to analyze citizen participation and organizational effectiveness and efficiency.
Per capita income and U.S. city populations were taken from 2000 U.S. Census Bureau statistics that publish the population of all the nation’s cities every ten years, with the last count conducted in 2000. The unit of analysis in this research includes law enforcement agencies located in 248 cities with a population of 100,000+. More populated cities were selected due to the belief that larger city police departments manage a larger population with a greater number of personnel as well as higher budgets and more reasons to include citizens in policing services.

Since small sample sizes tend to cause problems in generalizing findings, the researcher reduced this error by analyzing all police departments in cities with a population of 100,000+. However, 54 cities had missing data and were therefore excluded leaving 194 cities available for the analysis. The 2000 U.S. Census Bureau statistics were also used to collect per capita income data. Population and per capita income data were acquired from the U.S. Census Bureau because their statistics are known to be the most reliable.

The third data source was derived from the Federal Bureau of Investigation’s (FBI)’s Uniform Crime Reports (UCR) that were initiated first in 1930 and have since been widely used by scholars to gather information on policing issues. This researcher utilized UCR to gather data on the number of crimes reported by city police departments as well as the number of cleared crimes.
Study Population and Sampling Design

Research analyses are based on U.S. cities with a population of 100,000+ that were selected because they represent locations in which local law enforcement citizen involvement programs are more likely to be utilized. Densely populated cities with larger organizations may be inclined to provide more community involvement mechanisms. In addition, the availability of relevant data determined the target population.

The U.S. Census Bureau statistics revealed that there are 248 cities with a population of 100,000+ across the country. Since small sample sizes typically involve problems in generalizing findings, to reduce this error, all of the 248 cities with a population of 100,000+ were aimed to be included in the analysis by using the entire population. However, data were unavailable for 54 targeted cities thus leaving a sample size of 194.

Green (1991) suggested that there are two formulas used to determine sample size. In the first formula, \( n \) is equal to or greater than \( 50 + 8m \) where \( n \) represents the sample size and \( m \) is the number of predictors and control and independent variables. The second formula states that \( n \) should be either equal to or greater than \( 104 + m \) where \( m \) is the number of predictors. According to first formula, the sample size should include 90 subjects, and according to the second formula, 109 subjects should be included. Accordingly, the selection of 194 cities is appropriate in terms of scholarly standards.
Validity and Reliability

The research measures the impact of coproduction on effectiveness and efficiency of law enforcement agencies through employing variables used most frequently by the scholarly community, and the citizen involvement variable, developed by the researcher, which represents each city police department’s citizen involvement index value.

Variables consisting of law enforcement departmental budgets and number of police officers and police vehicles are also widely used in the existing literature (see for example, Darrough & Heineke, 1979; Donziger, 1996; Drake & Simper, 2000, 2002; Grey, 2000; Nyhan & Martin, 1999; Walker, 2001). Research further provides evidence that income is influential on crime rates, the primary product of policing (see Dahlberg & Gustavsson, 2008; Hipp, 2007; Virtanen et al., 2007). Likewise, citizen involvement used as an independent variable in this research has been determined to be viable in measuring organizational success in other scholarly works as well.

The techniques employed, Data Envelopment Analysis (DEA) and Ordinary Least Square (OLS) regression, are known to be widely used by researchers (see Bronn & Bronn, 2005; Kallio & Kallio, 2002; Mukherjee, Lapre, & Wassenhove, 1998; Verma & Gavirneni, 2006). Accordingly, the variables utilized, data derived, and techniques employed have been proven to be valid in measuring organizational effectiveness in law enforcement agencies.
The research is also reliable due to the consistency of its applications in measuring organizational efficiency and effectiveness through reliable variables. Crime clearance rates and crime rates are consistently employed as output of law enforcement activities that are reliable measures of society’s policing services.

Protection of Human Subject

Secondary data collected by government organizations are used in this research. The researcher does not have a direct connection to human subjects. Therefore, protection or violation of human subjects is not applicable and requires no approval from relevant departments of human services.
CHAPTER 7
FINDINGS AND ANALYSES

Introduction

Hypotheses were developed to measure the impact of citizen participation on law enforcement organizational efficiency and effectiveness. As discussed in Chapter 6, three models are used to test the hypothesized effects by employing statistical techniques and testing the postulated effects. In this chapter, the findings of the statistical analyses are presented followed by their implications to be discussed Chapter 8.

Descriptive Statistics and Comparison of Included and Excluded Cases

Out of 248 selected cities, 194 were included due to 54 cities missing at least one variable. To determine if there was a significant difference between included and excluded cases, the means of variables can be compared in both groups (Yoder, Longley, Whitbeck, & Hoyt, 2008; see also, Yoder & Hoyt, 2005; Yoder, Hoyt, Whitbeck, & LaFromboise, 2006). Through an examination of all variables, only two out of seven differed between included cases (n=194) and excluded cases (n=54). Means of agency budget and police officer ratio of excluded cases were higher than included cases. When compared to included cases, excluded cases had, on average, higher mean agency budgets ($191 million and $62 million, \( t(51) = 2.21, p = 0.032 \)). Equally, excluded cases had, on average, higher police officer ratios than included cases (23,885:19,802 per
Table 7

*Descriptive Statistics (n=194)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent Variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organizational Efficiency</td>
<td>63.22</td>
<td>20.21</td>
<td>13.8</td>
<td>100.0</td>
<td>.070</td>
<td>-.909</td>
</tr>
<tr>
<td>Crime Rates (Per 100,000 people)</td>
<td>11,017.89</td>
<td>4,630.04</td>
<td>2,460.14</td>
<td>27,314.14</td>
<td>.728</td>
<td>.514</td>
</tr>
<tr>
<td>Clearance Rates (Per 100,000 people)</td>
<td>2,992.15</td>
<td>1,515.83</td>
<td>712.65</td>
<td>8,468.82</td>
<td>1.172</td>
<td>1.447</td>
</tr>
<tr>
<td><strong>Control Variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agency Budget (in Dollars)</td>
<td>$62,051,493.6</td>
<td>$93,730,000</td>
<td>$3,121,552</td>
<td>$928,482,383</td>
<td>5.524</td>
<td>41.351</td>
</tr>
<tr>
<td>Police Vehicle Ratio</td>
<td>.0014</td>
<td>.0007</td>
<td>.0003</td>
<td>.0049</td>
<td>1.392</td>
<td>3.072</td>
</tr>
<tr>
<td>Police Officer Ratio</td>
<td>.002</td>
<td>.0008</td>
<td>.0009</td>
<td>.0064</td>
<td>1.644</td>
<td>4.907</td>
</tr>
<tr>
<td>Per Capita Income (in Dollars)</td>
<td>$20,773.47</td>
<td>$5,366.21</td>
<td>$9,762</td>
<td>$39,158</td>
<td>.989</td>
<td>1.339</td>
</tr>
<tr>
<td><strong>Independent Variable</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Citizen Involvement</td>
<td>11.03</td>
<td>3.73</td>
<td>2</td>
<td>17</td>
<td>-.240</td>
<td>-.878</td>
</tr>
</tbody>
</table>
100,000 population, \( t(235) = -2.951, p = 0.003 \). Table 7 provides descriptive statistics pertaining to the dependent variables (organizational efficiency scores, crime rates, crime clearance rates), control variables (agency budget, police vehicle ratio, police officer ratio, per capita income), and the independent variable (citizen involvement).

Citizen involvement, independent key predictor variable that was examined, represents the number of citizen-law enforcement collaboration mechanisms that each city police department employs. As shown in the descriptive statistics presented in Table 7, all cities with a population of 100,000+ employ some type of program with varying degrees of application.

The lowest value of citizen participation programs was observed in the Erie, PA police department that employed only two programs out of seventeen. Nine police departments that use all seventeen instruments of citizen participation in their jurisdictions include the Glendale, AZ; Phoenix, AZ; Tempe, AZ; Berkeley, CA; Riverside, CA; Hartford, CT; Fort Lauderdale, FL; Miami, FL; and Kansas City, MO police departments.

Police officer ratio, a control variable in all three models that measures the impact of citizen participation on efficiency and effectiveness in law enforcement organizations, was calculated for each city police department as the ratio between the number of police officers to each city’s population. As Table 7 reveals, the highest observed police officer ratio is .0064 observed in Washington, D.C., and the lowest is
.0009 in Irvine, CA. The average officer ratio was .002 among cities with a population of 100,000+.

Number of police vehicles ranged from 38 to 3,827 with a mean value of 381.22, and police vehicle ratio ranged from .0003 to .0049 with a mean value of .0014. The Los Angeles Police Department had the highest number of vehicles while Ann Arbor’s department had the fewest. However, the highest police vehicle ratio was observed in Tampa, Florida, with the lowest police vehicle ratio observed in Ann Arbor, Michigan.

Agency budget was observed to be the highest in Los Angeles Police Department with $928,482,383, and the Inglewood, CA police department represented the lowest with an agency budget totaling $3,121,552. The mean for agency budget was $62,051,493.

Per capita income ranged from $9,762 to $39,158 with a mean of $20,773.47 as shown in Table 7. Residents of Brownsville, TX seemingly had the lowest per capita income in comparison to Scottsdale, AZ having the highest.

In the first model, when the dependent variable, efficiency scores, was used to measure the impact of citizen participation on organizational efficiency and calculated through Data Envelopment Analysis (DEA), the lowest score with a value of 13.8 was observed in the Washington D.C. police department. The following ten police departments had the highest possible efficiency score of 100: Amarillo, TX; Amherst, MA; Ann Arbor, MI; Beaumont, TX; Fontana, CA; Garland, TX; Inglewood, CA; Irvine, CA;
Toledo, OH; and Wichita Falls, TX. The mean value of the efficiency scores variable was 63.22 as revealed in Table 7.

Finally, crime rates and crime clearance rates, also dependent variables in Model 2 and Model 3, are employed as policing outputs in Model 1 as well to measure efficiency scores for each department. Both rates are calculated per 100,000 residents living in any given city. Crime rates ranging from 2,460.14 to 2,7314.14 (per 100,000 population) with a mean score of 11,017.89 were observed to be the highest in St. Louis, MO and the lowest in Amherst, MA.

Crime clearance rates had an average score of 2992.15 (per 100,000 residents) with the highest clearance rate observed in Winston-Salem, NC with a value of 8468.82, and the lowest rate measured in Montgomery, AL with a value of 712.65. Other descriptive statistics presented in Table 7 include skewness, kurtosis, and standard deviation values used in the statistical analyses.

Univariate Distributions

Before analyzing bivariate correlations between the independent variable (citizen participation), control variables (police officer ratio to population, police vehicle ratio to each city, agency budget, and per capita income), and dependent variables (efficiency scores, crime rates, and crime clearance rates), normality, one of the required features in statistical analyses, was tested to examine whether variables have a normal distribution.
Table 8

*Descriptive Statistics after Log Transformation (n=194)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
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<tbody>
<tr>
<td><strong>Dependent Variables</strong></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Organizational Efficiency</td>
<td>63.22</td>
<td>20.21</td>
<td>13.8</td>
<td>100.0</td>
<td>.070</td>
<td>-.909</td>
</tr>
<tr>
<td>Crime Rates (Per 100,000 people)</td>
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<td>4,630.04</td>
<td>2,460.14</td>
<td>27,314.14</td>
<td>.728</td>
<td>.514</td>
</tr>
<tr>
<td>Log Transformed Clearance Rates</td>
<td>3.42</td>
<td>.22</td>
<td>2.85</td>
<td>3.93</td>
<td>-.074</td>
<td>-.316</td>
</tr>
<tr>
<td><strong>Control Variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Log Transformed Agency Budget</td>
<td>7.60</td>
<td>.37</td>
<td>6.49</td>
<td>8.97</td>
<td>.663</td>
<td>1.743</td>
</tr>
<tr>
<td>Log Transformed Vehicles Ratio</td>
<td>-2.9</td>
<td>.21</td>
<td>-3.48</td>
<td>-2.31</td>
<td>.030</td>
<td>-.215</td>
</tr>
<tr>
<td>Log Transformed Police Officer Ratio</td>
<td>-2.73</td>
<td>.16</td>
<td>3.06</td>
<td>-2.19</td>
<td>.373</td>
<td>-.164</td>
</tr>
<tr>
<td>Per Capita Income (in Dollars)</td>
<td>$20,773.47</td>
<td>$53,66.21</td>
<td>$9,762</td>
<td>$39,158</td>
<td>.989</td>
<td>1.339</td>
</tr>
<tr>
<td><strong>Independent Variable</strong></td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Citizen Involvement</td>
<td>11.03</td>
<td>3.73</td>
<td>2</td>
<td>17</td>
<td>-.240</td>
<td>-.878</td>
</tr>
</tbody>
</table>
The preliminary descriptive analysis revealed that crime clearance rates, agency budget, vehicle ratio, and police officer ratio are all positively skewed, or the distributions of these variables are not normal. There is consensus among scholars that non-normal distributions should be transformed into new variables to create a normal distribution (Mertler & Vannatta, 2005). Of the numerous ways to transform non-normal variables, logarithmic methods are widely used. Therefore, the researcher used log transformation of variables that have non-normal distributions.

Logs for transformation of all four skewed variables are used in this research thus permitting the researcher to create a normal distribution, or at least nearly normal, of variables. Therefore, crime clearance rates, agency budget, police vehicle ratio, and police officer ratio were transformed through the logarithmic transformation technique as presented in Table 8. Skewness values revealed that transformed variables became normal after transformation. Accordingly, transformed variables are used in bivariate and ordinary least square regression analyses.

Bivariate Analysis

To analyze the bivariate relationships between the independent variable, control variables, and dependent variables, a correlation analysis was performed. The initial interpretation of bivariate correlation analysis revealed that H2-b, H3, H4, H6, H7a, H7b, H7c, H8-b, H9-b, and H11-a, were supported but no supportive evidence was indicated in H1, H2-a, H5, H8-a, H9a, H10-a, H10-b, and H11-b.
The bivariate correlations between citizen participation, the independent variable, and organizational efficiency, the dependent variable in Model 1, revealed a statistically significant negative relationship ($r = -0.141$, $p<0.05$). Accordingly, citizen participation has a negative impact on organizational efficiency, or cities where citizen participation is higher tend to have lower organizational efficiency scores. Thus, the first hypothesis (H1) is rejected.

Hypothesis 2 stated that citizen involvement positively influences the accomplishment of organizational goals in law enforcement. Therefore, it was expected that more citizen involvement would lead to lower crime rates (H2-a). Bivariate correlation analysis, however, rejected H2-a. A statistically significant positive relationship was found between the value of citizen participation and crime rates ($r = 0.171$, $p<0.01$), or when citizen participation values increase, crime rates also increase. Accordingly, citizen involvement does not produce the desired effect on crime rates, or cities with higher citizen participation tend to have higher crime rates. Thus, the second hypothesis (H2) is also rejected.

Conversely, bivariate correlation analysis supported H2-b that stated: Citizen involvement is positively related to crime clearance rates. Bivariate analysis revealed that there is a statistically significant positive relationship between citizen participation and crime clearance rates ($r = 0.175$, $p<0.01$), or cities with greater citizen participation have greater crime clearance rates.
In relation to the overall impact that citizen participation has on organizational effectiveness, bivariate correlation analysis provided mixed results. On the one hand, crime rates were affected positively contrary to expectations; crime clearance rates were positively affected as anticipated, on the other.

Bivariate analysis also provided support for Hypothesis 3: Citizen involvement is greater in cities having a higher ratio of police officers to population than in cities having a lower ratio of police officers to population. Correlations revealed that there is a statistically significant positive relationship between citizen participation and police officer ratio \( (r = 0.130, p < 0.05) \).

In Hypothesis 4 that stated police agencies are more likely to have citizen involvement programs when they have higher police vehicle ratios to each city in proportion to population, a statistically significant positive relationship was found between police vehicle ratio and citizen participation \( (r = 0.204, p < 0.01) \). Thus, bivariate analysis supported Hypothesis 4.

Bivariate correlation analysis did not provide support for Hypothesis 5: Citizen involvement is higher in cities with greater per capita income than in cities with lower per capita income. Contrary to this assumption, there is no statistically significant relationship between citizen participation and per capita income \( (r = 0.043, p > 0.1) \), or per capita income does not affect citizen participation across cities. Accordingly, Hypothesis 5 is rejected.
Assumedly, an agency’s budget will reflect higher citizen participation. Therefore, Hypothesis 6 stated: Police agencies in cities with greater agency budgets are likely to have more citizen involvement programs than in cities with lower police agency budgets. Bivariate analysis revealed that there is a statistically significant positive relationship between agency budget and citizen participation in law enforcement \((r=0.162, p<0.05)\). Thus, Hypothesis 6 is supported.

Correlation analysis provides strong support for Hypotheses 7-a and 7-b as presented in Table 9. As stated in Hypothesis 7-a: Police officer ratios to cities’ population are negatively related to organizational efficiency of police agencies \((r=-0.773, p<0.01)\), or when police officer ratio increases, organizational efficiency decreases. Similarly, as Hypothesis 7-b stated: Police vehicle ratio is negatively related to organizational efficiency of police agencies \((r=-0.581, p<0.01)\), or organizational efficiency tends to increase when police vehicle ratio decreases. Thus, Hypothesis 7-a and Hypothesis 7-b are both supported.

Correspondingly, bivariate analysis revealed a strong and statistically significant negative relationship between agency budget and police organizational efficiency \((r=0.575, p<0.01)\), or organizational efficiency tends to decrease as agency budget increases. Accordingly, Hypothesis 7-c is supported: Agency budget is negatively related to organizational efficiency of police agencies.
### Bivariate Correlations

<table>
<thead>
<tr>
<th></th>
<th>Organizational Efficiency</th>
<th>Crime Rates</th>
<th>Log Clearance</th>
<th>Log Vehicle</th>
<th>Log Budget</th>
<th>Per Capita Income</th>
<th>Log Officer Ratio</th>
<th>Citizen Involvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organizational</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Efficiency</td>
<td></td>
<td>-.376***</td>
<td>.684***</td>
<td>.379***</td>
<td>.145**</td>
<td>.096*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crime Rates</td>
<td></td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Log Clearance</td>
<td>.001</td>
<td>.684***</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Log Vehicle</td>
<td>-.581***</td>
<td>.557***</td>
<td>.379***</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Log Budget</td>
<td>-.575***</td>
<td>.260***</td>
<td>.087</td>
<td>.145**</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Per Capita Income</td>
<td>-.003</td>
<td>-.388***</td>
<td>-.340***</td>
<td>-.161**</td>
<td>.096*</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Log Officer Ratio</td>
<td>-.773***</td>
<td>.589***</td>
<td>.360***</td>
<td>.582***</td>
<td>.394***</td>
<td>-.112*</td>
<td>1.000</td>
<td></td>
</tr>
<tr>
<td>Citizen Involvement</td>
<td>-.141**</td>
<td>.171***</td>
<td>.175***</td>
<td>.204***</td>
<td>.162**</td>
<td>.043</td>
<td>.130**</td>
<td>1.000</td>
</tr>
</tbody>
</table>

*** Correlation is significant at the 0.01 level (1-tailed).

** Correlation is significant at the 0.05 level (1-tailed).

* Correlation is significant at the 0.1 level (1-tailed).
Referring to Table 9, bivariate correlations also supported Hypothesis 8-b stating that there is a statistically significant positive relationship between police officer ratio to population and crime clearance rates ($r = 0.360$, $p<0.01$), or when officer ratio increases, crime clearance rates also tend to increase. However, Hypothesis 8-a was not supported by bivariate correlations that revealed a statistically significant positive relationship between police officer ratio and crime rates, contrary to expected results ($r = 0.589$, $p<0.01$) indicating that crime rates are higher in cities where police officer ratio is higher.

Similar correlations resulted between police vehicle ratio and crime rates and crime clearance rates. Police vehicle ratio to each city in proportion to population had a statistically significant positive effect on crime rates contrary to Hypothesis 9-a ($r = 0.557$, $p<0.01$), indicating that crime rates are higher in cities with higher police vehicle ratios. Nonetheless, bivariate correlations supported Hypothesis 9-b in that there is a statistically significant relationship between police vehicle ratio and crime clearance rates ($r = 0.379$, $p<0.01$). Therefore, it can be argued that crime clearance rates are higher in cities where police vehicle ratio is high.

Bivariate correlations did not support Hypothesis 10-a. Results reveal that there is a statistically significant positive relationship between law enforcement agency budget and crime rates ($r = 0.260$, $p<0.01$), or the exact opposite of expected results. In other words, it was hypothesized that agency budget is negatively related to crime rates, or as agency budget increases, crime rates decrease. In addition, bivariate analysis
revealed that there is not a statistically significant correlation between agency budget and crime clearance rates \((r=0.087, p>0.1)\), or budget does not have a statistically significant effect on crime clearance rates as hypothesized in 10-b.

As shown in Table 9, bivariate correlation analysis provides support for Hypothesis 11-a that stated per capita income is negatively related to crime rates across U.S. cities \((r=-0.388, p<0.01)\), or crime rates tend to decrease as per capita income increases. Accordingly, one might argue that economically stable cities are more likely to have lower crime rates than economically deprived cities. However, bivariate analysis rejected Hypothesis 11-b. On the contrary, analysis showed a statistically significant negative relationship between per capita income and crime clearance rates \((r=-0.340, p<0.01)\). Obviously, per capita income is negatively related to crime clearance rates or when per capita income is higher, crime clearance rates are lower.

Briefly, bivariate correlation analysis supported Hypotheses 2-b, 3, 4, 6, 7-a, 7-b, 7-c, 8-b, 9-b, and 11-a but rejected Hypotheses 1, 2-a, 5, 6-a, 9-a, 10a, 10b, and 11-b. This does not mean, however, that non-supported hypotheses are rejected. For example, Ordinary Least Square (OLS) regression analyses may differ as well as provide more insightful relationships between the independent variable (citizen participation), dependent variables (organizational efficiency, crime rates, and crime clearance rates), and control variables (patrol officer ratio to population, police vehicle ratio to each city in proportion to population, per capita income, and agency budget).
Before conducting OLS regression analysis, strong relationships between the independent variable and control variables must be addressed given that a connection between two independent or control variables whose correlation coefficient exceeds 0.70 may be problematic, better known as multicollinearity (Yang, 2007). Multicollinearity refers to the level of interconnection among variables (Warner, 2008) and exists when there is a strong correlation between two or more independent variables (Vogt, 2005) that may influence accuracy of the analysis and lead to errors. Therefore, multicollinearity makes it difficult, if not impossible, to measure the separate impacts of highly correlated variables on dependent variables (Vogt, 2005). With this in mind, the researcher checked for multicollinearity among variables and found no correlation coefficient that exceeded 0.70, thus indicating that this research does not have a problem according to bivariate correlation analysis. However, the problem of multicollinearity must also be addressed during OLS regression analysis for the benefit of accuracy in the statistical examination.

Multivariate Regression Analyses

In this section, the researcher ran multivariate regression analyses to test the models developed in Chapter 6. Specifically, OLS regression analysis was used to compute the hypothesized impact of citizen participation on law enforcement organizational efficiency and effectiveness as the analysis represents an effective means to clarify the causal association between variables as well as enable users to measure the impact of independent and control variables on dependent variables (Mertler &
Vannata, 2005). A number of control variables are also used in the regression to account for a possible spurious relationship between the predictor variable (citizen participation) and dependent variables (organizational efficiency, crime rates, and crime clearance rates). There are three models used to test the hypothesized relationships between the independent variable and dependent variables.

Model 1 measures the impact of citizen participation on organizational efficiency of law enforcement agencies in 194 cities with a population of 100,000+. Three control variables (agency budget, police officer ratio, police vehicle) are used to diagnose the spurious impact, if any, between independent and dependent variables.

There are two different models, Model 2 and Model 3, in relation to the impact that citizen involvement has on organizational effectiveness because both crime rates and crime clearance rates are included as two dependent variables. Therefore, Model 2 uses crime rates as the dependent variable and citizen participation as a predictor variable. Model 3 computes the impact of citizen participation on crime clearance rates. Agency budget, police officer ratio to population, per capita income, and police vehicle ratio to each city in proportion to population are also used as control variables in the second and third models as these variables are influential factors on the effectiveness of police organizations.

**OLS Regression Analysis Results for Organizational Efficiency**

Model 1 pertaining to organizational efficiency was tested through standard multiple regression analysis. The OLS regression results provide interesting and
unexpected results that illustrate the relationship between citizen participation and law enforcement organizational efficiency. Police officer ratio to population, agency budget, and police vehicle ratio to each city in proportion to population are included as control variables. In Table 10, multiple regression model as multivariate model and simple linear regression analysis as bivariate model are presented. The equation for the multiple regression model can be characterized as:

$$Y_{(\text{Organizational Efficiency})} = \alpha + B_{(1)} X_{(\text{Citizen Participation})} + B_{(2)} X_{(\text{Police Officer Ratio})} + B_{(3)} X_{(\text{Agency Budget})} + B_{(4)} X_{(\text{Police Vehicle Ratio})}$$

Each of the Bs shows the independent effect of that variable on the dependent variable, holding other variables constant. In other words, Bs reveal the amount of change on Y when X increases one unit (Yang, 2008). For example, if $X_{(\text{Citizen Participation})}$ increases one unit, $Y_{(\text{Organizational Efficiency})}$ changes $B_{(1)}$ amount.

Prior to running OLS regression analysis to test the effect of citizen participation and other control variables on organizational efficiency, data screening was performed. Outliers were examined through mahalanobis distances by first computing the distances through SPSS software for each case in the dataset. Then, a chi-square ($\chi^2$) distribution table was checked for five (5) degrees of freedom (df) as this research has five total variables for the organizational efficiency model. The $\chi^2$ value for 5 df was observed to be 20.52. Next, mahalanobis distances were checked, and the researcher determined
that there was no mahalanobis distance that exceeded 20.52, thus showing that there is no outlier in the dataset.

The multiple regression model was also checked for fundamental assumptions of multivariate regression analysis. Accordingly, this researcher examined linearity, normality, and homoscedasticity to measure whether the model was appropriate for OLS regression analysis. First, a normality check was conducted, and the results revealed that the assumption of normality of the residuals was met. Because the researcher log transformed the non-normal distributed variables, this process assisted in meeting the normality assumption for the residuals. Second, the assumptions of linearity and homoscedasticity were also met because the residual scatterplot graph showed that the “points cluster along the horizontal line in a somewhat rectangular pattern” when the standardized residuals for the Y-axis and standardized predicted values for the X-axis are selected in the regression (Mertler & Vannata, 2005, p. 173). The plot shows a distribution around the center and has a rectangular shape indicating that linearity and homoscedasticity assumptions in the multivariate model are met. Therefore, the organizational efficiency model, Model 1, does not present problems of nonlinearity, non-normality, and heteroscedasticity.

Of note, collinearity did not appear to be of concern in the multiple regression model. Collinearity is important because the problem creates difficulty in accurately measuring separate effects of independent and control variables (Vogt, 2005; Warner, 2008;). To check for collinearity, one should refer to the Variance Inflation Factor (VIF)
located in Table 10. Basibuyuk (2008) argued that in considering collinearity to be a problem, the VIFs of variables must be at least 4.0 or higher. However, Mertler and Vannatta (2005) suggest that a collinearity problem exists when the VIF of any variable is larger than 10 or higher. There is not a collinearity problem in model b because the VIF values of variables range from 1.065 to 1.778.

Pre-analysis data screening and examination of regression analysis assumptions show that Model 1, model of organizational efficiency, is appropriate to test through OLS regression, and taking these pre-steps make interpreting statistical results statistically trustworthy, sound, and, as Mertler and Vannatta’s (2005) stated, safe. Accordingly, the results of simple linear regression analysis are first discussed followed by results of the multiple regression analysis.

The simple regression model, used interchangeably as the bivariate model, is used in all three models of organizational efficiency and organizational effectiveness, an accepted way to predict the relationship between independent variables and the dependent variable. Results of bivariate regression analysis or simple linear regression shows that there is a statistically significant negative relationship between citizen participation and organizational efficiency (see Table 10) \( \text{(B=-.762, p<0.05)} \). Accordingly, organizational efficiency tends to decrease in cities where citizen participation increases. However, the bivariate model explains only 1.5% of variance in agency organizational efficiency in each of the U.S. cities.
Ordinary Least Square (OLS) regression analysis presented in Table 10 shows that the relationship between citizen participation and organizational efficiency disappears when control variables are introduced. In other words, there is no statistically significant relationship between citizen participation and organizational efficiency when police officer ratio, police vehicle ratio, and agency budget are controlled. This does not support the premise in Hypothesis 1 that citizen participation has a significant positive effect on organizational efficiency, a result that is inconsistent with the hypothesis as well as inconsistent with the results of bivariate analysis.

As shown in Table 10, multiple regression provides insightful evidence pertaining to Hypotheses 7-a, 7-b, and 7-c. The results of OLS indicate that in controlling for other variables, there is a statistically significant negative relationship between police officer ratio to population and organizational efficiency ($B=-61.981, p<0.001$). That is, when police officer ratio increases, organizational efficiency decreases. Therefore, the expected relationship in Hypothesis 7-a is supported. According to multivariate regression analysis, police officer ratio is the strongest predictor for efficiency in agencies having the greatest standardized regression coefficient ($\beta=-0.495$). In relation to the effect of police officer ratio on organizational efficiency, multivariate regression results are consistent with bivariate analysis in that both show officer ratio to have a statistically significant negative effect on a police agency’s efficiency.
Table 10
Estimates of Regression Models Predicting Organizational Efficiency in the U.S Cities

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Simple Linear Regression Model (Bivariate Model)</th>
<th>Multiple Regression Model (Multivariate Model)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B&lt;sup&gt;a&lt;/sup&gt;</td>
<td>β&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>Constant</td>
<td>71.628***</td>
<td>(.047)</td>
</tr>
<tr>
<td>Citizen Involvement</td>
<td>-0.762**</td>
<td>(.387)</td>
</tr>
<tr>
<td>Police Officer Ratio</td>
<td>-61.981***</td>
<td>(6.399)</td>
</tr>
<tr>
<td>Agency Budget</td>
<td>-19.225***</td>
<td>(2.332)</td>
</tr>
<tr>
<td>Police Vehicle Ratio</td>
<td>-24.406***</td>
<td>(4.739)</td>
</tr>
<tr>
<td>Model Adjusted R²</td>
<td>.015</td>
<td></td>
</tr>
<tr>
<td>Model F</td>
<td>3.873**</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>194</td>
<td></td>
</tr>
</tbody>
</table>

* p ≤ .1  ** p ≤ .05  *** p ≤ .01 (one-tailed test)

Note: Standard errors in parentheses.

<sup>a</sup> Unstandardized regression coefficient,
<sup>b</sup> Standardized regression coefficient,
<sup>c</sup> Variance Inflation Factor
Referring to Table 10, holding other variables constant, the results of multivariate model reveal a statistically significant negative relationship between police vehicle ratio and organizational efficiency (B=-24.406, p<0.001). In other words, police vehicle ratio has a negative impact on the efficiency of police agencies in 194 U.S. cities with a population of 100,000+. Cities with a higher police vehicle ratio are likely to have lower law enforcement organizational efficiency, a finding consistent with Hypothesis 7-b as well as consistent with bivariate correlation results.

Again referring to Table 10, agency budget has a statistically significant negative effect on organizational efficiency in relation to multivariate model (B=-19.225, p<0.001), or controlling for other variables, police organizational efficiency is higher in cities where agency budgets are lower, consistent with the expected relationship stated in Hypothesis 7-c. Results show that agency budget is the second strongest predictor for organizational efficiency (β=-0.349) or, in other words, has the second largest standardized regression coefficient after police officer ratio. In addition, the impact of agency budget on efficiency is consistent with bivariate analysis that found a statistically significant negative relationship between agency budget and organizational efficiency.

These results are also consistent with Hypotheses 12-a, 12-b, and 12c given that the multiple regression model reveals that police officer ratio, police vehicle ratio, and agency budget are stronger predictor variables than citizen participation for organizational efficiency due to their larger standardized coefficients and more significant effects. In this sense, standardized correlation coefficient (β) is very helpful
by showing which independent and/or control variable(s) has/have a stronger effect on
the dependent variable, or β values indicate the magnitude of the effect on the
dependent variable (Yang, 2008). Table 10 indicates that citizen participation does not
have a significant relationship to organizational efficiency and also has the lowest β
value. Thus, the multiple regression model supports Hypotheses 12-a, 12-b, and 12c.

Multiple regression analysis model provides an understanding of the effects that
the independent and control variables have on organizational efficiency due to its
coefficient of determination (adjusted R²) value of .717 shown in Table 10. Adjusted R²,
the proportion of variation in the dependent variable explained by the independent
variables (Yang, 2008), is used and interpreted in this research since its purpose is to
adjust for the number of variables in the analyses. In other words, a R² value of .717
indicates that citizen participation, police officer ratio, police vehicle ratio, and agency
budget in multivariate model explains almost 72% of variance in organizational
efficiency of police agencies of cities across the United States.

OLS Regression Analysis Results for Organizational Effectiveness

This researcher employed two dependent variables in relation to the impact of
citizen participation on law enforcement organizational effectiveness, considered as a
major factor in decreasing crime rates and increasing crime clearance rates. Because
some police forces may be successful in preventing crime while not too successful in
clearing crimes, ignoring either one of these vital aspects would be incomplete as well
as incapable of providing an accurate picture of police effectiveness. Therefore, crime
rates and crime clearance rates were employed as dependent variables to examine the impact of citizen participation on police effectiveness.

Before discussing the results of OLS regression pertaining to crime rates and crime clearance rates, the researcher must point out that data screening, or outliers, was performed, and mahalanobis distances were calculated for each. A chi-square ($\chi^2$) value with six (6) degrees of freedom (df) ($\chi^2$ with 6 df = 22.46) was obtained from a chi-square distribution table as the research included a total of six variables for both models of organizational effectiveness. By checking for mahalanobis distances, no distance case values were found to exceed 22.46 at p<0.001 level. Hence, the study does not have an outlier problem that threatens the accuracy of statistical analysis. After data were screened, OLS analyses were run to test the previously developed two models of organizational effectiveness.

Models 2 and 3 developed to test the impact of citizen participation on crime rates and crime clearance rates were also examined to determine if they met the basic assumptions of multiple regression analysis that is vital for the statistical accuracy of measurements. For example, if these assumptions are not met, further actions, namely transformation of variables, must be initiated before beginning interpretation of multivariate analysis results. Accordingly, assumption of normality was first checked using a normal probability plot that indicated little departure from the 45 degree line. Then, assumptions of linearity and homoscedasticity were examined and found to also meet both models. Residual scatterplots provided enough evidence to conclude that all
assumptions were met by showing that the distribution had a rectangular shape with concentration around the middle. Therefore, fundamental assumptions of multiple regression were met and determined to be safe in interpreting the results of both Model 2 and Model 3 on crime rates and crime clearance rates.

**OLS Regression Analysis Results for Crime Rates**

Model 2 represents the impact of citizen participation and number of control variables relating to crime rates in each of the 194 selected cities. Police officer ratio, police vehicle ratio, agency budget, and per capita income were used as control variables. Model 2 uses a similar equation to that of organizational efficiency (Model 1):

\[
Y_{\text{Crime Rates}} = \alpha + B_{(1)} X_{\text{Citizen Participation}} + B_{(2)} X_{\text{Police Officer Ratio}} + B_{(3)} X_{\text{Agency Budget}} + B_{(4)} X_{\text{Police Vehicle Ratio}} + B_{(5)} X_{\text{Per Capita Income}}
\]

Each of the Bs indicates the independent effect of the variable on the dependent variable. This equation allowed the researcher to measure the amount of change in crime rates for a one unit increase in citizen participation when holding other variables constant: police officer ratio, police vehicle ratio, agency budget, and per capita income.

Results of OLS regression analysis and bivariate analyses on the effect of citizen participation on crime rates are presented in Table 11. As shown in Table 11, through bivariate analysis, there is a statistically significant positive relationship between citizen involvement and crime rates (B=212.057, p<0.01), or crime rates tend to increase in cities where citizen participation is higher, an unexpected result. Thus, Hypothesis 2-a
that states there is a negative relationship between citizen involvement and crime rates is rejected. However, the bivariate model explained only 2.4% of the variance indicating a relatively small percentage requiring additional variables. As such, this researcher developed a more complex multiple regression model (multivariate model) to determine the relationship between citizen involvement and crime rates.

Multivariate model consisting of citizen participation, police officer ratio, police vehicle ratio, agency budget, and per capita income explains almost 51% of the variance in crime rates that clearly provides a larger picture than the bivariate model. Therefore, to prevent a spurious relationship between citizen involvement and city crime rates, the model used these four control variables believed to be influential in crime rates.

With respect to OLS regression results, there is no statistically significant relationship between citizen participation and crime rates when holding other variables constant which therefore contradicts Hypothesis 2-a. In addition, OLS is not consistent with bivariate analysis that found a statistically significant relationship between citizen participation and crime rates. From this standpoint, as opposed to the hypothesized relationship, citizen involvement does not have a statistically significant impact on crime rates across U.S. cities. Accordingly, the effect of citizen involvement on crime rates found through bivariate analysis is spurious due to its relationships with the other control variables.

The multivariate model presents significant results in relation to Hypotheses 8-a, 9-a, 10-a, and 11-a. While the multivariate model rejected Hypotheses 8-a, 9-a, and 10-
Hypothesis 11-a was supported. As shown in Table 11, police officer ratio has a positive effect on crime rates ($B=9828.220, p<0.001$) indicating that crime rates tend to be greater in cities where the police officer ratio is high, holding other variables constant, exactly opposite to the stated hypothesis. Thus, hypothesis 8-a is rejected consistent with bivariate correlation results that showed a statistically significant positive relationship between police officer ratio and crime rates.

Multivariate model also presents a similar effect relating to police vehicle ratio to each city in proportion to population on crime rates. As Table 11 reveals, police vehicle ratio has a positive effect on crime rates contrary to Hypothesis 9-a that stated a higher police vehicle ratio to each city in proportion to population is negatively related to lower crime rates ($B=6256.641, p<0.001$). Accordingly, cities with a high police vehicle ratio are more likely to have higher crime rates than cities with a lower police vehicle ratio, controlling for other variables. This finding rejects Hypothesis 9-a and consistent with bivariate analysis.

Table 11 reveals that agency budget has a positive impact on crime rates ($B=1323.173, p<0.01$), or crime rates tend to be higher in cities with larger law enforcement budgets, holding other variables constant. This finding is not consistent with the expected outcome of Hypothesis 10-a, which stated there is a statistically significant negative relationship between larger agency budgets and lower crime rates.
Table 11

*Estimates of Regression Models Predicting Crime Rates in the U.S Cities*

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Simple Linear Regression Model (Bivariate Model)</th>
<th>Multiple Regression Model (Multivariate Model)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$B^a$</td>
<td>$\beta^b$</td>
</tr>
<tr>
<td>Constant</td>
<td>8678.711*** (1028.497)</td>
<td>50758.819*** (8091.221)</td>
</tr>
<tr>
<td>Citizen Involvement</td>
<td>212.057*** (88.357)</td>
<td>.171</td>
</tr>
<tr>
<td>Police Officer Ratio</td>
<td>9828.220*** (1943.570)</td>
<td>.342</td>
</tr>
<tr>
<td>Agency Budget</td>
<td>1323.173** (712.687)</td>
<td>.105</td>
</tr>
<tr>
<td>Police Vehicle Ratio</td>
<td>6256.641*** (1444.493)</td>
<td>.277</td>
</tr>
<tr>
<td>Per Capita Income</td>
<td>-.274*** (.045)</td>
<td>-.318</td>
</tr>
<tr>
<td>Model Adjusted R²</td>
<td>.024</td>
<td>.505</td>
</tr>
<tr>
<td>Model F</td>
<td>5.760***</td>
<td>40.426***</td>
</tr>
<tr>
<td>N</td>
<td>194</td>
<td>194</td>
</tr>
</tbody>
</table>

* p ≤ .1  ** p ≤ .05  *** p ≤ .01 (one-tailed test)

Note: Standard errors in parentheses.

$^a$ Unstandardized regression coefficient,

$^b$ Standardized regression coefficient,

$^c$ Variance Inflation Factor
which was rejected through OLS regression analysis and that is consistent with bivariate analysis finding a statistically significant positive relationship.

Contrary to Hypothesis 10-a, regression analysis supported Hypothesis 11-a that postulated per capita income across cities to have a statistically significant negative effect on crime rates (\(B=-.274, p<0.001\)), or in cities where per capita income is higher, crime rates are more likely to decrease controlling for other variables. This result is consistent with Hypothesis 11-a in addition to bivariate analysis that showed a statistically significant negative relationship between per capita income and crime rates.

Among the variables presented in multivariate model (see Table 11), police officer ratio had the greatest standardized correlation coefficient (\(\beta\)) value compared to other control variables and the independent variable, citizen participation. Thus, police officer ratio has a stronger relationship to crime rates than citizen participation that supports Hypothesis 13-a.

Similar to police officer ratio, variables including police vehicle ratio, agency budget, and per capita income had greater (\(\beta\)) values than citizen participation and had a statistically significant effect on crime rates whereas citizen participation did not. Consistent with Hypotheses 13-b, 13c, and 13-d, this finding revealed that police vehicle ratio, agency budget, and per capita income have a stronger relationship to crime rates than citizen involvement which is not significantly related.

This researcher also checked multivariate model for collinearity concerns in regression analysis by examining Variance Inflation Factors (VIFs) ranging in value from
1.052 to 1.788 that show whether there is a high linear relationship between one of the variables and the other independent and control variables. As discussed in the section on OLS estimates for organizational efficiency, if VIF values exceed 4.0, an issue regarding the accuracy of statistical analysis becomes problematic due to difficulty in measuring the separate effects of two independent or control variables as a result of high correlation between independent (and control) variables. In this situation, testing the impact of variables separately and thoroughly becomes difficult. Multiple regression model, however, had no collinearity problems as all VIF values were in the vicinity of 1 as shown in Table 11.

**OLS Regression Analysis Results for Crime Clearance Rates**

This researcher developed Model 3 of crime clearance rates in relation to police effectiveness because, as previously mentioned, police effectiveness is related to two components: crime rates and crime clearance rates. Model 3 tests the impact of citizen participation on crime clearance rates through OLS regression analysis using four control variables to accurately compute the relationship. A very similar equation to the one used by Model 2 (crime rates) is used in Model 3 (crime clearance rates):

\[
Y_{\text{(Crime Clearance Rates)}} = \alpha + B_{(1)}X_{\text{(Citizen Participation)}} + B_{(2)}X_{\text{(Police Officer Ratio)}} + B_{(3)}X_{\text{(Agency Budget)}} + B_{(4)}X_{\text{(Police vehicle Ratio)}} + B_{(5)}X_{\text{(Per Capita Income)}}
\]

Table 12 presents the results of both bivariate analysis and OLS regression analysis regarding crime clearance rates. In the bivariate model, there was found to be
a statistically significant positive relationship between citizen participation and crime clearance rates ($B=0.010$, $p<0.01$) indicating that crime clearance rates tend to increase when citizen participation increases across U.S. cities. Consistent with the expected outcome, Hypothesis 2-b stated there is a positive relationship between citizen involvement and crime clearance rates. Or, cities with a greater police officer ratio are more likely to have more citizen involvement than cities with a lesser officer ratio. Thus, Hypothesis 2 is supported by the bivariate model.

However, because there are other variables that may result in higher crime clearance rates which cannot be tested through bivariate analysis, they must be taken into account and controlled in order to gain a more accurate illustration in relation to citizen participation and crime clearance rates. Therefore, to prevent a spurious relationship between citizen participation and city crime clearance rates, Model 3 utilizes police officer ratio, police vehicle ratio, agency budget, and per capita income as four control variables believed to be influential in crime clearance rates.

Another reason for developing a new model for crime clearance rates is the small coefficient of determination ($R^2$) value of the bivariate model that explains only 2.6% of the variance in crime clearance rates ($R^2=0.026$). While the second multivariate model has a coefficient of determination value of .246 indicating that the multivariate model explains almost one-fourth of the variance in crime clearance rates of 194 cities in the United States, multivariate model also holds other variables constant and provides a better picture of the effects of citizen involvement on crime clearance rates.
Table 12

*Estimates of Regression Models Predicting Crime Clearance Rates in the U.S Cities*

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Simple Linear Regression Model (Bivariate Model)</th>
<th>Multiple Regression Model (Multivariate Model)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$B^a$</td>
<td>$\beta^b$</td>
</tr>
<tr>
<td>Constant</td>
<td>3.311***</td>
<td>(.048)</td>
</tr>
<tr>
<td>Citizen Involvement</td>
<td>.010***</td>
<td>(.004)</td>
</tr>
<tr>
<td>Police Officer Ratio</td>
<td>.277***</td>
<td>(.112)</td>
</tr>
<tr>
<td>Agency Budget</td>
<td>-.009</td>
<td>(.041)</td>
</tr>
<tr>
<td>Police Vehicle Ratio</td>
<td>.199***</td>
<td>(.083)</td>
</tr>
<tr>
<td>Per Capita Income</td>
<td>-.0000117***</td>
<td>(.000)</td>
</tr>
<tr>
<td>Model Adjusted R²</td>
<td>.026</td>
<td></td>
</tr>
<tr>
<td>Model F</td>
<td>6.095***</td>
<td>13.584***</td>
</tr>
<tr>
<td>N</td>
<td>194</td>
<td>194</td>
</tr>
</tbody>
</table>

* $p \leq .1$  ** $p \leq .05$  *** $p \leq .01$ (one-tailed test)

Note: Standard errors in parentheses.

$^a$ Unstandardized regression coefficient,

$^b$ Standardized regression coefficient,

$^c$ Variance Inflation Factor
Multivariate regression analysis results show that the relationship between crime clearance rates and citizen participation continues after introducing the four control variables. That is, controlling for police officer ratio, police vehicle ratio, agency budget, and per capita income, citizen participation has a statistically significant positive effect on crime clearance rates (B=.007, p<0.05). Consistent with bivariate analysis and Hypothesis 2-b, cities with higher citizen participation values are more likely to have higher crime clearance rates. Thus, Hypothesis 2-b is supported.

Table 12 provides insightful results regarding the impact of each variable used in the regression. For example, the multivariate model shows that police officer ratio also has a positive effect on crime clearance rates (B=.277, p<0.01), or cities where police officer ratio to population is high are more likely to have higher crime clearance rates consistent with the hypotheses. Recalling bivariate analysis represented in Table 12 results of bivariate correlations and multivariate analysis showed Hypothesis 8-b, greater police officer ratio leads to greater crime clearance rates, is supported.

As depicted in Table 12, police vehicle ratio has a positive effect on crime clearance rates (B=.199, p<0.01), or crime clearance rates tend to be higher in cities where the police vehicle ratio to each city in proportion to population is high, holding other variables constant. This is consistent with Hypothesis 9-b stating that police vehicle ratio is positively related to crime clearance rates, or a higher police vehicle ratio equals higher clearance rates. Results from bivariate regression analysis are also consistent with multivariate regression analysis. Thus, Hypothesis 9-b is supported.
Multivariate analysis also indicates that agency budget is not an important factor in crime clearance rates in cities. Table 12 shows that agency budget does not have a statistically significant effect, that is, changes in agency budget do not produce a statistically significant impact on clearance rates. Both bivariate analysis and multivariate regression rejected Hypothesis 10-b that stated agency budget is positively related to crime clearance rates and higher agency budget indicates higher crime clearance rates.

In regard to per capita income, the multiple regression model found a statistically significant negative effect on crime clearance rates ($B=-.0000117$, $p<0.001$), or when per capita increases, crime clearance rates also tend to decrease. Hypothesis 11-b stated that per capita income is positively related to crime clearance rates, which is not consistent with either multivariate results or bivariate analysis. Therefore, all statistical analyses employed by this research did not support the hypotheses pertaining to the impact of per capita income on crime clearance rates.

Hypotheses 14-a, 14-b, 14-c, and 14-d stated that police officer ratio, police vehicle ratio, agency budget, and per capita income have a more significant effect on crime clearance rates than citizens participation on crime clearance rates. By examining the standardized correlation coefficient ($\beta$) values, Table 12 supports Hypotheses 14-a, 14-b, and 14-d but rejects Hypothesis 14-c. Standardized correlation coefficient ($\beta$) values for each variable show that per capita income has the strongest effect on crime clearance rates ($\beta=-.290$) whereas police officer ratio to population has the second
strongest effect (β=.207). Police vehicle ratio to each city in proportion to population had a (β) value of .189 consistent with Hypotheses 14-a, 14-b, and 14-d with citizen participation having a (β) value of .125, the lowest among all independent and control variables excepting agency budget. However, Hypothesis 14-c which stated that agency budget has a stronger effect on crime clearance rates than citizen participation was rejected because statistical results showed that citizen participation had a significant effect. Accordingly, citizen participation appears to have a stronger effect on crime clearance rates. Thus, Hypothesis 14-c is rejected based on the results of statistical analyses shown in Table 12.

Collinearity was not an issue in the multivariate model of crime clearance rates, according to Variance Inflation Factors (VIFs) values. When VIF values are examined, the values can be observed as ranging from 1.052 to 1.788. In this research, there was no VIF value over 4.0 indicating that there is not a high correlation problem between variables used in the model of the impact of citizen participation on crime clearance rates; thus, the model enabled the researcher to compute the effect of each independent and control variable on the dependent variable separately and accurately.

Summary of Findings

In this chapter, this study focused primarily on the results of bivariate and multivariate analysis to compute the impact of citizen involvement in local law enforcement and its impact on police organizational efficiency and organizational effectiveness. As shown in Tables 13, 14, and 15, findings reveal that the following
hypotheses as summarized were supported: H2-b, H3, H4, H6, H7-a, H7-b, H7-c, H8-b, H9-b, H11-a, H12-a, H12-b, H12-c, H13-a, H13-b, H13-c, H13-d, H14-a, H14-b, and H14-c, whereas H1, H2-a, H5, H8-a, H9-a, H10-a, H10-b, H11-b, H14-c, were rejected.

As shown in Table 13, bivariate analysis found a statistically significant negative relationship between citizen participation and organizational efficiency of police departments in 194 cities located throughout the United States with a population of 100,000+, or the expected outcome in relation to hypothesis 1-a. However, the multivariate model did not support these results. When other variables were controlled, the significant relationship disappeared, or citizen participation did not have a statistically significant effect on law enforcement efficiency, an unexpected result. Thus, one can argue that the hypothesized relationship between citizen participation (the independent variable) and organizational efficiency (the dependent variable) as summarized in hypotheses 1-a was not supported by multivariate analysis when other variables were held constant and not supported by bivariate analysis.

Interestingly, as shown in Table 14, results of bivariate and multivariate analyses regarding the impact of citizen participation and crime rates were counter-intuitive. Bivariate analysis showed a statistically significant positive relationship between citizen participation and crime rates contrary to the expected outcome, while the multivariate model revealed that citizen participation does not have a significant effect on crime
rates. Considering the expected negative relationship, both statistical analyses do not support the expected association in hypothesis 2-a.

However, in Table 15, statistical analyses provide support for the hypothesized relationship between citizen participation and crime clearance in cities. In both the bivariate analysis model and OLS model presented, there was a statistically positive association between citizen participation and crime clearance rates, or crime clearance rates tend to be higher in cities where citizen participation values are higher. Clearly, the expected relationship was supported in hypothesis 2-b.

In addition, as shown in Table 13, both bivariate and multivariate statistical analyses showed that there was a significant negative relationship regarding the effect of police officer ratio to population on organizational efficiency indicating that organizational efficiency tends to decrease in cities where the police officer ratio increases, consistent with expected results. In other words, police officer ratio is an important factor in organizational efficiency as summarized in hypothesis 7-a.

Statistical examination shown in Table 13 also reveals that police officer ratio to population had a statistically significant positive effect on crime rates in cities. Cities with a higher police officer ratio tend to have higher crime rates was expected to be negative given that more police officers are typically believed to lead to lower crime rates. However, through bivariate and multivariate analyses, the anticipated relationship between police officer ratio and crime rates rejected hypothesis 8-a.
Similarly, higher police officer ratios were assumed to lead to higher crime clearance rates. As shown in Table 15, bivariate analyses and the multivariate model supported the expected outcome as summarized in hypothesis 8-b.

Regarding the relationship between police vehicle ratio to each city in proportion to population and organizational efficiency shown in Table 13, there was a statistically significant negative relationship with both bivariate analysis and the multivariate model supporting the hypothesis. Thus, in cities where police vehicle ratio is high and tend to have organizational efficiency, hypothesis 7-a was supported.

This researcher expected there to be a negative relationship between police vehicle ratio and crime rates as more vehicles indicate a more effective war against crime and criminals. Therefore, cities with higher police vehicle ratios were assumed to have lower crime rates. Nevertheless, contrary to the expected, both bivariate and multivariate models rejected hypothesis 9-a finding, surprisingly, a positive relationship between police vehicle ratio and crime rates.

On the other hand, Table 15 shows that police vehicle ratio to city population positively affects crime clearance rates through multivariate analysis, and bivariate analysis found a significant positive relationship that supports the expected association between police vehicle ratio and crime clearance rates, or a greater police vehicle ratio tends to lead to greater crime clearance rates across U.S. cities. Thus, hypothesis 9-b was supported.
Agency budget was expected to have a negative impact on organizational efficiency, or organizational efficiency was more likely to be low in cities where an agency’s budget is high. The bivariate model revealed a statistically significant negative relationship, and similarly, the multivariate model indicated that an agency’s budget had a negative impact on organizational efficiency. Thus, the expected association was supported in hypothesis 7-b.

Agency budget was expected to have a negative effect on crime rates, or when city police departments have higher budgets, crime rates were expected to be lower. Results showed a statistically significant positive relationship between an agency budget’s and crime rates. Thus, both bivariate and multivariate analyses rejected hypothesis 10-a summarized in Table 14.

As shown in Table 15, both models indicated that there is no statistically significant relationship between agency budget and crime clearance rates. Contrary to the expected positive association of the summarized hypothesis 10-b, law enforcement agency budgets do not significantly affect crime clearance rates.

Results presented in Table 15 reveal that the statistical models do not support the positive association between per capita income and crime clearance rates as expected. Both models rejected the summarized hypothesis 11-b that per capita income had a significant positive effect on crime clearance rates, or crime clearance rates in cities decrease when per capita income increases. However, conducted analyses supported hypothesis 11-a that per capita income is negatively related to crime rates.
In Chapter 8, theoretical, organizational, and political implications of these results will be presented as well as an extended discussion of findings. Limitations about datasets, statistical techniques, samples, as well as recommendations for future research will then be addressed.
Table 13

Summary of Hypotheses Testing for Model 1–Organizational Efficiency–H₁, H₇-a, H₇-b, H₇-c, H₁₂-a, H₁₂-b and H₁₂-c (n=194)

<table>
<thead>
<tr>
<th>Hypotheses Summarized</th>
<th>Simple Linear Regression Model (Bivariate Model) of Organizational Efficiency</th>
<th>Multiple Regression Model (Multivariate Model) of Organizational Efficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>H₁: Across U.S. cities, civic engagement is positively related to organizational efficiency of law enforcement agencies.</td>
<td>Rejected</td>
<td>Rejected</td>
</tr>
<tr>
<td>H₇-a: Across U.S. cities, police officer ratio is negatively related to organizational efficiency of law enforcement agencies.</td>
<td>Supported</td>
<td>Supported</td>
</tr>
<tr>
<td>H₇-b: Across U.S. cities, police vehicle ratio is negatively related to organizational efficiency of law enforcement agencies.</td>
<td>Supported</td>
<td>Supported</td>
</tr>
<tr>
<td>H₇-c: Across U.S. cities, agency budget is negatively related to organizational efficiency of law enforcement agencies.</td>
<td>Supported</td>
<td>Supported</td>
</tr>
<tr>
<td>H₁₂-a: Across U.S. cities, police officer ratio to population has a stronger effect organizational efficiency than citizen participation.</td>
<td>-</td>
<td>Supported</td>
</tr>
<tr>
<td>H₁₂-b: Across U.S. cities, police vehicle ratio to each city in proportion to population has a stronger effect on organizational efficiency than citizen participation</td>
<td>-</td>
<td>Supported</td>
</tr>
<tr>
<td>H₁₂-c: Across U.S. cities, agency budget has a stronger effect on organizational efficiency than citizen participation.</td>
<td>-</td>
<td>Supported</td>
</tr>
</tbody>
</table>
Table 14

Summary of Hypotheses Testing for Model 2–Crime Rates–$H_{2-a}$, $H_{8-a}$, $H_{9a}$, $H_{10-a}$, $H_{11-a}$, $H_{13-a}$, $H_{13-b}$, $H_{13-c}$, and $H_{13-d}$ ($n=194$)

<table>
<thead>
<tr>
<th>Hypotheses Summarized</th>
<th>Simple Linear Regression Model (Bivariate Model) Of Crime Rates (per 100,000 residents)</th>
<th>Multiple Regression Model (Multivariate Model) Of Crime Rates (per 100,000 residents)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$H_{2-a}$: Across U.S. cities, citizen participation is negatively related to crime rates.</td>
<td>Rejected</td>
<td>Rejected</td>
</tr>
<tr>
<td>$H_{8-a}$: Across U.S. cities, police officer ratio to population is negatively related to crime rates.</td>
<td>Rejected</td>
<td>Rejected</td>
</tr>
<tr>
<td>$H_{9a}$: Across U.S. cities, police vehicle ratio to each city in proportion to population is negatively related to crime rates.</td>
<td>Rejected</td>
<td>Rejected</td>
</tr>
<tr>
<td>$H_{10-a}$: Across U.S. cities, agency budget is negatively related to crime rates.</td>
<td>Rejected</td>
<td>Rejected</td>
</tr>
<tr>
<td>$H_{11-a}$: Across U.S. cities, per capita income is negatively related to crime rates.</td>
<td>Supported</td>
<td>Supported</td>
</tr>
<tr>
<td>$H_{13-a}$: Across U.S. cities, police officer ratio to population has a stronger effect on crime rates than citizen participation.</td>
<td>-</td>
<td>Supported</td>
</tr>
<tr>
<td>$H_{13-b}$: Across U.S. cities, police vehicle ratio to each city has a stronger effect on crime rates than citizen participation.</td>
<td>-</td>
<td>Supported</td>
</tr>
<tr>
<td>$H_{13-c}$: Across U.S. cities, agency budget has a stronger effect on crime rates than citizen participation.</td>
<td>-</td>
<td>Supported</td>
</tr>
<tr>
<td>$H_{13-d}$: Across U.S. cities, per capita income has a stronger effect on crime rates than citizen participation.</td>
<td>-</td>
<td>Supported</td>
</tr>
</tbody>
</table>
### Table 15

*Summary of Hypotheses Testing for Model 3–Crime Clearance Rates—H$_{2b}$, H$_{8b}$, H$_{9b}$, H$_{10b}$, H$_{11b}$, H$_{14a}$, H$_{14b}$, H$_{14c}$, and H$_{13d}$ (n=194)*

<table>
<thead>
<tr>
<th>Hypotheses Summarized</th>
<th>Simple Linear Regression Model <em>(Bivariate Model)</em> Of Crime Clearance Rates (per 100,000 residents)</th>
<th>Multiple Regression Model <em>(Multivariate Model)</em> Of Crime Clearance Rates (per 100,000 residents)</th>
</tr>
</thead>
<tbody>
<tr>
<td>H$_{2b}$: Across U.S. cities, citizen participation is positively related to crime clearance rates.</td>
<td>Supported</td>
<td>Supported</td>
</tr>
<tr>
<td>H$_{8b}$: Across U.S. cities, police officer ratio to population is positively related to crime clearance rates.</td>
<td>Supported</td>
<td>Supported</td>
</tr>
<tr>
<td>H$_{9b}$: Across U.S. cities, police vehicle ratio to each city is positively related to crime clearance rates.</td>
<td>Supported</td>
<td>Supported</td>
</tr>
<tr>
<td>H$_{10b}$: Across U.S. cities, law enforcement agency budget is positively related to crime clearance rates.</td>
<td>Rejected</td>
<td>Rejected</td>
</tr>
<tr>
<td>H$_{11b}$: Across U.S. cities, per capita income is positively related to crime clearance rates.</td>
<td>Rejected</td>
<td>Rejected</td>
</tr>
<tr>
<td>H$_{14a}$: Across U.S. cities, police officer ratio to population has a stronger effect on crime clearance rates than citizen participation.</td>
<td>-</td>
<td>Supported</td>
</tr>
<tr>
<td>H$_{14b}$: Across U.S. cities, police vehicle ratio has a stronger effect on crime clearance rates than citizen participation.</td>
<td>-</td>
<td>Supported</td>
</tr>
<tr>
<td>H$_{14c}$: Across U.S. cities, agency budget has a stronger effect on crime clearance rates than citizen participation.</td>
<td>-</td>
<td>Rejected</td>
</tr>
<tr>
<td>H$_{14d}$: Across U.S. cities, per capita income has a stronger effect on crime clearance rates than citizen participation.</td>
<td>-</td>
<td>Supported</td>
</tr>
</tbody>
</table>
CHAPTER 8
DISCUSSION AND IMPLICATIONS

Introduction

A number of datasets and several variables were used to test hypotheses regarding citizen participation and its effects on law enforcement organizational efficiency and organizational effectiveness. Using control variables consisting of police officer ratio to a city’s population, police vehicle ratio to each city in proportion to population, agency budget, and per capita income, three models were developed relating to organizational efficiency, crime rates, and crime clearance rates.

This chapter contains an extended discussion of citizen involvement and law enforcement and provides insightful arguments concerning managerial, policy, and theoretical implications as well as factors that limit statistical accuracy. Some research questions for future studies are also addressed.

Citizen Involvement

Theory of coproduction indicates that citizen participation provides a number of benefits for public organizations. When citizens participate in governmental service production and delivery, public sector tends to be more efficient (Brudney, 1986; Church et al., 2002; Creighton, 2005; Ferris; 1984; Mintrom, 2003; Mottiar & White, 2003; Pammer, 1992; Percy, 1987; Rosentraub & Warren, 1987). This is because participating citizens provide free inputs, including labor, time, and even financial
resources, for governmental agencies. In this way, agencies can save money and other resources to produce and deliver public services.

Engagement of residents of community in governmental production and delivery of services and goods is also considered as a way to have effective public organizations (Brudney, 1986; Church et al., 2002; DeSario & Langton, 1987; Mosher, 1968; Neiman, 1989; Schachter & Aliaga, 2003; Ziegenfuss, 2000). Citizens represent the constituency that are subject to public service. For example, citizens understand the kinds of governmental services and goods needed, the degree of public demand, the problems related to service provision, and the issues that affect effective and efficient public service production and delivery. Thus, citizens are believed to bring unique insights into providing services and goods effectively without wasting governmental resources.

Hypotheses developed basically used these assumptions as the anticipated impact of citizen engagement on law enforcement organizational efficiency and effectiveness. Accordingly, the researcher expected that when citizens participate in policing, police agencies have greater organizational efficiency. In the same way, organizational effectiveness of law enforcement benefits positively from citizen engagement in the production of safety and security. That is the reason, civic engagement in policing was assumed to lower crime rates and increase crime clearance rates. Crime rates and crime clearance rates were modeled as the models of police effectiveness because the prominent goals of policing are to prevent crime and arrest criminals. In other words, stakeholders expect the police to make neighborhoods and
cities safe and secure lives. The police can accomplish this through fighting crime and criminals. Therefore, the researcher anticipated that citizen participation affects crime rates negatively whereas it is positively related to crime clearance rates.

Bivariate analyses often yield statistically significant relationships between two variables that might be spurious due to other factors. Thus, it was important to include the other variables that may affect the relationship between the independent variable and dependent variable. Having this consideration, a number of control variables were employed to accurately test the hypotheses. Thus, police officer ratio, police vehicle ratio, agency budget, and per capita income were used as control variables in the developed models because they are believed to be influential factors in police efficiency and effectiveness (see Carrington et al., 1997; Diez-Ticio & Mancebon 2002; Drake & Simper, 2000, 2002; Grey, 2000; Nyhan and Martin, 1999; Thanassoulis, 1995; Walker, 2001). Another reason for selection of these control variables is that they have been utilized extensively by the scholarly community as factors affecting law enforcement practices.

The three models developed to test the relationship between citizen involvement and organizational efficiency and effectiveness of law enforcement indicate several significant contributions to the existing literature of civic engagement. Some of the findings are consistent with what is expected according to the existing studies concerning citizen involvement and its impact on government organizations. Nevertheless, a number of findings derived from multivariate analyses indicated
different insights about citizen involvement’s impact, as well as that of control variables, on organizational efficiency and effectiveness of law enforcement agencies. There are a number of important findings that are different from existing scholarly works regarding the theory of coproduction.

Citizen involvement in cities was expected to mediate organizational efficiency according to the theory of coproduction (Church et al., 2002; Mottiar & White, 2003; Pammer, 1992; Percy, 1987). In other words, when public organizations adopt mechanisms for citizen involvement, organizations tend to be more efficient (Brudney, 1986; Ferris, 1984; Rosentraub & Warren, 1987). Therefore, the researcher anticipated that civic engagement is positively related to the organizational efficiency of law enforcement agencies across the U.S. cities. Bivariate regression analyses results, however, provided support for the exact opposite of this assumption. According to results, citizen involvement was negatively related to organizational efficiency in law enforcement. That is, when citizen involvement increases, organizational efficiency decreases. Nevertheless, multiple regression analysis did not support the results of bivariate regression. Contrary, results of multiple regression analyses showed that there was no statistically significant relationship between citizen involvement and organizational efficiency. Accordingly, having citizens participate in policing does not have a statistically significant impact on organizational efficiency. Obviously, the negative relationship found through simple linear regression analysis was spurious due to the relationship of citizen involvement with other independent variables. When other
variables were controlled, statistically significant relationship disappeared. From this perspective, citizen participation does not positively affect efficiency of public agencies. Indeed, there is no statistically significant relationship between citizen involvement and organizational efficiency of law enforcement across U.S. cities.

The relationship between citizen participation and organizational efficiency obtained through bivariate regression analysis may indicate an endogenous model. In other words, the relation of citizen participation with organizational efficiency emerges because of other variables. When other factors are taken into account, the relationship disappears. From this point of view, the relationship between citizen participation and organizational efficiency may suggest an endogenous model because assumedly the relationship is influenced by other predictors. In other words, the relationship between citizen involvement and organizational efficiency is affected by other variables including agency budget, officer ratio, and vehicle ratio. In this sense, one might argue that this is one of the most significant contributions of this study to the literature and thus may be indicative of further issues.

First, police agencies that have higher budgets, officer ratios to population, and police vehicle ratios to each city might likely employ more citizen participation programs due to additional resources available for investing in civic engagement, an argument supported by bivariate correlation analyses. Accordingly, citizen participation does not have a significant effect on organizational efficiency when other factors are introduced that determine the level of citizen involvement in a given jurisdiction. One might
therefore argue that the impact of citizen involvement on organizational efficiency indicates an endogenous model. That is, the negative impact of citizen involvement on organizational efficiency that found in bivariate analysis is due to other variables that affect citizen involvement. Results obtained through bivariate and multivariate analyses provide support for this argument.

Second, this research revealed that the greater the resources, the lower the organizational efficiency. From this standpoint, a negative relationship, obtained through bivariate analysis, between citizen participation and organizational efficiency is understandable given that citizen participation is used more when resources are greater. Although bivariate correlations showed a negative relationship between citizen participation and organizational efficiency, multivariate analysis indicated that there was no correlation when other factors were held constant. This is not consistent with studies that found citizen involvement to be positively related to government efficiency (Brudney, 1986; Church et al., 2002; Ferris; 1984; Mottiar & White, 2003; Pammer, 1992; Percy, 1987; Rosentraub & Warren, 1987). This is clearly a significant contribution to civic engagement and law enforcement literature.

The two separate models developed to test the impact of citizen engagement on organizational effectiveness of police agencies in cities also provided unique insights regarding the effects of governmental citizen participation programs. The literature provided numerous arguments about the positive impact of citizen participation instruments in the production and delivery of public goods and services. More effective
public organizations are one of the expected impacts of citizen engagement in government. The existing body of research provided an enormous amount of evidence for this assumption (Desario and Langton, 1987; Thomas, 1987; Ziegenfuss, 2000). That is why this researcher anticipated that citizen participation helps law enforcement organizations to become more effective in preventing crime and clearing committed crimes. That is to say, the greater a city’s citizen participation, the more effective the police forces are. Accordingly, the researcher hypothesized that when citizen participation increases crime rates decreases. Similarly, when citizens participate, the police were expected to clear more crimes that indicates greater crime clearance rates.

Findings of this research indicated mixed results regarding organizational effectiveness and citizen involvement. On the one hand, the effect of citizen participation on crime clearance rates were consistent with the theory of coproduction given that both bivariate analysis and multivariate analyses supported the anticipated relationship that citizen participation is positively related to crime clearance rates. Hence, one might argue that when citizen involvement in law enforcement increases, crime clearance rates increase, or citizen involvement has a statistically significant positive impact on clearing crimes. Accordingly, it can be assumed that when citizens are involved in law enforcement activities, they tend to assist the police through knowledge of neighborhood occurrences as well as places, what Loukaitou-Sideris (1999) and Welsh and Farrington (2005) call hot spots, that are more likely to be subject to crime or used by criminals to hide out. Consequently, through citizen involvement,
police may arrest more offenders or suspects thus leading to higher crime clearance rates. The statistically significant and positive association between citizen involvement and crime clearance rates found through simple regression analysis provided support for this assumption.

Although multiple regression analysis indicated support for the anticipated relationship, when other variables (police officer ratio, police vehicle ratio, agency budget, per capita income) were introduced into the model, the effect of citizen participation on crime clearance rates was weaker compared to other introduced variables; still, however, there was a statistically significant positive impact. From this point of view, one might argue that the other variables including officer ratio, vehicle ratio, and per capita income, with the exception of agency budget, are better predictors than citizen participation for crime clearance rates according to multivariate regression analyses. However, this research supports the theory of coproduction in terms of the relationship between citizen engagement and organizational effectiveness by revealing that community participation has a significant positive impact on crime clearance rates in urban areas, which indicates a positive impact on law enforcement organizational effectiveness.

Interestingly, agency budget was not found to be an influential factor in clearing crimes despite that police administrators may seek higher budgets through promises of effectively increasing crime clearance rates. According to results found through multivariate regression analyses, citizen involvement can assist the police in increasing
clearance rates, whereas agency budget has no significant effect. This is another significant contribution to the literature by providing vital organizational and policy implications when an agency’s budget is compared to citizen participation on crime clearance rates. The researcher suggests that police managers should increase citizen involvement in their jurisdictions, the police officer ratio to population, and police vehicle to each city in proportion to population in an effort to effectively clear more crimes. Statistical analyses reveal that agency budget seems not to be an important predictor of clearing crimes.

The relationship between citizen involvement and crime rates, on the other hand, was found to differ from the expected. Bivariate analysis showed that there is a positive relationship between citizen participation and crime rates, or when citizen participation increases, crime rates also increase, a result not consistent with the anticipated relationship and the existing literature. According to the theory of coproduction and a majority of scholars, assumedly, citizen participation affects police effectiveness positively and leads to lower crime rates because effective police organizations are coupled to lower crime rates, as well as higher crime clearance rates. Nevertheless, simple regression analysis indicated the exact opposite or, citizen involvement is positively related to crime rates across cities. This relationship, however, disappeared when other variables were introduced and controlled. Multivariate analysis revealed that citizen participation does not affect crime rates.
Based on the results obtained in testing crime rates through bivariate and multivariate analyses, the argument that more citizen participation indicates less crime rates appear meaningless in terms of this research, another major finding and contribution to the literature. Thus, one might assume that citizen participation is not a panacea for increased crime rates experienced in U.S. cities.

However, a careful analysis of bivariate and multivariate models regarding the impact of citizen participation on crime rates might indicate further issues, for example, the possibility of simultaneity. Because cities with high crime rates are likely to devote additional resources to prevent crime, agencies in these cities are also more likely to have larger budgets that enable them to hire more officers and purchase more vehicles. In turn, citizens may be welcomed to participate in the production and delivery of safety and security service provisions due to more resources available for crime prevention. One might accordingly address the subject of simultaneity. The issue might be that crime rates cause increased citizen participation rather than citizen participation leading to higher crime rates. The problem is that there is essentially a feedback loop between the two. As crime rates go up, citizen participation goes up. Then as citizen participation goes up, crime rates may fall, which then might lead to a decrease in citizen participation. The simultaneity issue is that the two variables affect each other simultaneously in this feedback loop.

To solve this problem, one could use a structural equation modeling technique in future studies that would allow researchers to identify reciprocal relationships between
variables if they affect one another in terms of causal order (Stewart, Simons, Conger, & Scaramella, 2002). Follow-up studies should focus on reciprocal effects of citizen participation and crime rates since causal effects may come from both sides. Similar reciprocal relationships could also be applied to crime rates and number of police officers, number of police vehicles, and agency budgets. That is, if crime rates are high, police agencies have high level of resources including more personnel, more vehicle, and higher agency budgets; however, after a certain point, through the uses of these resources, crime rates may fall, which, in consequence, may lead a decrease in resources used to fight crime. Thus, structural equation models might well serve as an effective approach to estimate causal influences when there are reciprocal effects between variables used in statistical models (Rosenberg, Schooler, & Schoenbach, 1989). Accordingly, one might argue that structural equation modeling can be used to solve simultaneity problems between crime rates and citizen participation.

Perhaps a more effective way to analyze the problem of simultaneity is through continuous time models, a widely used technique particularly in econometrics and physics (Delsing, Oud, & Bruyn, 2005) when there is a mutual influence between variables that does not end between measurements. This might explain and solve the simultaneity problem between citizen involvement and crime rates given that they influence “each other over time and are not restricted to the discrete observation time points the researcher happens to choose” (Delsing et al., 2005, p. 227). One might therefore argue that continues time analysis could solve for the simultaneity problem
between community engagement and crime rates. To address the issue, one would need data over time. However, it goes beyond the scope of this study. Hence, future studies should take the issue of simultaneity into account to estimate the relationship between crime rates and citizen participation.

Consequently, one might, in the light of utilized statistical analyses, argue that citizen involvement and its potential benefits for the public sector are overestimated. Accordingly, citizen involvement operates differently in law enforcement than expected in terms of organizational effectiveness and organizational efficiency. In a similar way, although community partnership has some positive effects on clearing crimes, one might suggest that the theory of coproduction should be revised given that it does not produce the hypothesized impact of citizen involvement on law enforcement organizational effectiveness and organizational efficiency.

Discussion of Other Variables

Through multivariate analysis used in this research, other factors were found to have a statistically significant negative relationship on organizational efficiency scores: police officer ratio to population, police vehicle ratio to each city, and agency budget. That is to say, police efficiency depends on these variables rather than citizen participation that has no significant effect. Specifically, police officer ratio was found to be the strongest predictor for police efficiency followed by agency budget and police vehicle ratio. Notably, however, citizen participation mechanisms are more likely to be employed when these variables are present in greater amounts throughout cities.
put in a different way, agencies welcome citizens to participate in policing when the former have enough sources to devote to costs of coproduction.

In addition, both bivariate and multivariate statistical analyses found police officer ratio to population to be the strongest predictor for crime rates in U.S. cities, although contrary to expected outcomes, it appeared to have a positive impact on crime rates. In other words, cities with a higher police officer ratio to population have higher crime rates. Likewise, police vehicle ratio to each city on proportion to population had a significant positive effect on crime rates, or when police vehicle ratios increase, crime rates also increase.

In regard to agency budget, contrary to anticipated results, crime rates tend to increase in cities where agency budgets are high, or, in other words, agency budget positively affects crime rates. Therefore, one might assume that police officer ratio to population, agency budget, and police vehicle ratio to each city all have a positive effect on crime rates, just opposite to the negative association that was expected. However, even though these variables are strong predictors that were found to be positively related to crime rates, a reverse causation is likely in that higher crime rates may be causing agencies’ having greater police officers and police vehicle ratios and agency budgets because public is willing to spend more on crime especially when it is considered a serious problem for the community. That is to say, cities with higher crime rates are more likely to employ more officers, have more police vehicles, and have
greater budgets to effectively fight crime and provide safer streets and neighborhoods to citizens.

Consequently, results show that police officer ratio, police vehicle ratio, and agency budget are positively related to crime rates, contrary to the anticipated. This finding reveals some implications about the bivariate analyses results that indicated citizen participation is positively correlated to crime rates. One, therefore, might argue that a statistically significant relationship between citizen involvement and crime rates obtained through bivariate analysis is a spurious relationship and disappears when control variables are introduced.

Per capita income has a significant negative impact on crime rates, or crime rates tend to decrease in cities where per capita income increases. Given that economically privileged communities are more likely to have lower crime rates than those of economically deprived communities, this finding is consistent with the expected outcome that provides support to the widespread theory among scholars (Cebula, 2005; Hsying, 1996; Luiz, 2001; Shihadeh & Ousey, 1998; Spelman, 2005) that fiscal problems are likely to increase crime rates especially in urban settlements where low per capita income is positively related to crime rates (Shihadeh & Ousey, 1998). For example, individuals who struggle with economic difficulties are more inclined to use illegal means in order to meet their basic needs (Shihadeh & Ousey, 1998; see also Luiz, 2001). In accordance with the existing literature and multivariate analyses regarding the impact
of economy on crime, higher per capita income tends to produce lower crime rates across cities and thus it is negatively related to crime rates.

Police officer ratio and police vehicle ratio seem to be important variables to predict crime clearance rates as well as crime rates and organizational efficiency. They both have a significant positive effect on crime clearance rates. That indicates that cities with high police officer ratio and high police vehicle ratio are more likely to have greater crime clearance rates. These two variables seem to help police organizations to arrest more and clear more crimes. This finding is consistent with the expected. Statistical analyses show that police officer ratio is a stronger predictor than police vehicle ratio for crime clearance rates. Per capita income is also significant factor in predicting crime clearance rates. Interestingly, however, it has a negative impact on crime clearance rates. This result is not consistent with the existing literature because it is argued that wealth of cities affects contemporary policing positively (Sharp, 2006; Spelman, 2005).

That is the reason, the researcher expected that cities with higher per capita income are more likely to have well-budgeted law enforcement and these forces are more likely to have higher crime clearance rates. Contrary to anticipated, results show that cities with greater per capita income values are more likely to have lower crime clearance rates. Wealthier communities therefore have lower crime clearance rates. Notably, per capita income is the strongest predictor for crime clearance rates in U.S. cities. This is another significant finding and contribution to the literature.
Agency budget, another economy related control variable, does not have a significant impact on crime clearance rates. That is to say, as opposed to police managers’ claim for more money to fight with crime and clearance, agency budget does not significantly influence crime clearance rates, according to the statistical analyses applied by this research. To have higher crime clearance rates, accordingly, other predictors, citizen participation, police officer ratio, police vehicle ratio, and per capita income must be focused. These findings are clearly very important and have a number of implications for organizations, local communities, scholarly community, and policymakers. In the following section, implications of the study are addressed.

Implications

Theoretical implications. Controversial to the theory of coproduction, citizen participation was found to be neither efficient nor promising for law enforcement effectiveness. From the perspective that cities tend to have more citizen participation mechanisms when there are additional resources available, one might conclude that citizen participation requires certain commitments from law enforcement agencies including increased budgets as well as higher ratios of police officers to population and police vehicles to each city in proportion to population. Because when the levels of these resources are increased, police efficiency decreases, the theoretical assumption that citizen participation contributes to the efficiency of law enforcement organizations should be revised.
Similarly, the anticipated relationship supported by the theory of coproduction stating that citizen participation has a positive effect on organizational effectiveness should be addressed and revised given that results of this research revealed that when other possible predictors are controlled, citizen participation has no statistically significant impact on crime rates, or, the level of citizen participation in law enforcement agencies does not affect crime rates across cities. This finding may also indicate that citizen involvement programs represent only a symbolic value in law enforcement to ensure legitimacy of police conduct rather than practical contributions to policing services.

As further revealed, agency budget positively affected crime rates, a finding not consistent with the anticipated. Thus, effective citizen involvement program implementation indicates a need for additional agency costs as well as political and administrative costs with respect to potential gains (Whelan & Dupont, 1986; Wilson, 1999). Indeed, citizen involvement is considered to be impracticable since it is too expensive and cumbersome albeit desirable (Stivers, 1990; see also Roberts, 2004), a reason that citizen involvement activities may not be genuinely supported by police administrators despite increasing agency budgets. In other words, citizen involvement might merely have a symbolic value and public officials do not support it to be effective and influential. Accordingly, analyses regarding the relationship between crime rates and citizen involvement, as well as the relationship between budget and organizational
effectiveness, indicate that the assumption of the theory of coproduction and existing literature should be further researched and perhaps revised.

On the other hand, results based on the effect of citizen participation on crime clearance rates suggest that citizen participation assists public organizations in becoming more effective in the production and delivery of public goods and services. Accordingly, to be effective, crime rates should be as low as possible while crime clearance rates should be as high as possible. As such, this research provided support for the relationship between citizen involvement in law enforcement and crime clearance rates. From this point of view, citizen participation does contribute to the organizational effectiveness of law enforcement while earlier analyses of civic engagement’s impact on crime rates showed that citizen involvement does not have a statistically significant effect on organizational effectiveness. Obviously, further research is needed to accurately predict the impact of citizen involvement on effectiveness of public agencies and public services.

This research also posed a number of theoretical implications regarding the use of citizen participation in public agencies. For example, statistical analyses revealed that city police organizations adopt programs when there is a higher level of budget, police officer ratio, and police vehicle ratio, or one might suggest that the public sector does not use citizen participation programs to become more efficient or effective but rather because there are ample resources available for purposes other than production and delivery of services and goods.
Further, this research revealed that there is no correlation between per capita income in U.S. cities and citizen participation based on results obtained through statistical techniques. Indeed, citizen participation was expected to be higher in cities with greater per capita income (DeSario, 1987). Therefore, the assumption that citizen participation is higher in cities with greater per capita income is not a valid assumption from the standpoint of law enforcement and requires further research. Accordingly, this study visibly made the need to revisit the theoretical assumptions regarding the impact of citizen involvement on public organizations, at least from the perspective of law enforcement.

**Managerial and policy implications.** Findings indicated that based on the results of bivariate correlation analyses, although citizen participation is an influential factor relating to police conduct, it does not significantly affect organizational efficiency or provide promising results. Other factors such as police officer ratio, police vehicle ratio and agency budget are significant variables that have significant effects on organizational efficiency. If police agencies’ main concern is organizational efficiency, then these factors should be addressed. Therefore, other factors, namely police officer ratio to population, police vehicle ratio to each city in proportion to population, and agency budget that are negatively related to organizational efficiency should be taken into consideration if efficiency is a main agency concern, and by the same token, if agencies are inefficient, by decreasing the values of these variables with the same level of outputs could improve organizational efficiency, or inefficient agencies are expected
to produce more output with the amount of input they have. For this reason, inefficient agencies must either decrease the amount of police officer ratio, police vehicle ratio, and agency budget or increase crime clearance rates and decrease crime rates as outputs to become effective. As citizen participation does not provide a positive impact on organizational efficiency, but indeed, a negative relationship through bivariate analyses, it is not a desirable factor when considering organizational efficiency. Agencies with a limited budget and small officer and vehicle ratios are less likely to employ citizen participation tools in their jurisdiction. Therefore, the study implies that citizen participation does not positively affect organizational efficiency but rather has a negative correlation, if any, with efficiency. That is, because citizen participation seems to be costly and agencies with lower police officer ratios, police vehicle ratios and agency budgets are less likely to implement citizen participation instruments, inefficient police agencies must address other factors, namely number of police officers, number of police vehicles, and agency budget. Accordingly, one might argue that police managers and policymakers must become aware that the impact of citizen involvement on organizational efficiency stated by scholarly community is apparently overestimated, if not misleading.

Nevertheless, considering the fact that agencies with high officer ratios, high vehicle ratios, and high agency budgets employ more citizen participation mechanisms may indicate that citizen involvement programs require resources, such as more officers and vehicles. Agencies need more officers, more money, and more vehicles to apply
citizen participation programs. Greater resources inevitably lead to inefficiency in public agencies. This indicates that employment of citizen participation programs are not an efficient act of agencies because having citizens involved requires more resources. In other words, police agencies appear to use some of their resources for citizen participation programs which make them produce fewer policing outputs to decrease crime rates and increase clearance rates.

In relation to crime and factors that affect crime rates, this research indicated notable implications for agencies and policy makers alike. According to the theory of coproduction, when citizens and public officials collaborate to produce and deliver public services, public agencies are expected to be more effective in producing and delivering services to their constituencies; therefore citizen participation is expected to affect crime rates negatively. Nevertheless, bivariate correlation revealed a positive impact that may well indicate that citizen participation is not an effective technique to use in crime prevention, and therefore, policy makers and police managers should focus on other factors. Interestingly, police officer and police vehicle ratios in relation to a city’s population appear to be positively related to crime rates although police managers have traditionally argued for the need of more officers and equipment to decrease crime. This analysis indicates that by adding more officers to the police force and purchasing more police vehicles as well as having an increased budget is not a solution in the war against crime and may suggest that police managers successfully use high crime rates to easily justify the need for more resources to prevent crime.
The impact of per capita income on crime rates is intriguing, more especially for policy makers in that it appears to be negatively associated with crime rates, or cities with high per capita income are more likely to have lower crime rates, consistent with the existing literature. This finding implies that fighting crime requires larger scale actions than simply more agency personnel, equipment, and financial resources. Because crime is apparently related to a city’s socioeconomic conditions, policy makers should strive to find ways to increase per capita income, although clearly, not a simple solution.

Citizen participation, however, seems to be an important factor in clearing crimes given that cities with higher citizen participation seem to have higher crime clearance rates. This implies an important implication for police managers to have more citizen participation programs in their jurisdictions. Clearing crime is another aspect of police effectiveness. Accordingly, police managers and policymakers may employ more citizen participation programs for law enforcement in cities to clear up more crimes. Citizen-public officials’ joint production of safety and security apparently result in greater crime clearance rates in cities.

Finally, in regard to crime clearance rates, additional police officers and police vehicles were found to be important factors in clearing crimes suggesting that police managers would do well to hire more officers, and purchase additional vehicles in an effort to increase crime clearance rates. On the other hand, agency budget did not appear to have a significant effect on crime clearance rates and, as such, an increased
budget is not likely to clear crimes. Interesting, further analyses indicated that cities with high per capita income appear to have lower crime clearance rates, or when communities are economically secure, crime clearance rates tend to decrease. Briefly, policy makers and police managers should address citizen participation, ratio of police officers to population and ratio of police vehicles to each city in proportion to population in an effort to increase crime clearance rates. By increasing the level of these predictors, crime clearance rates will be positively affected, whereas raising an agency’s budget was found to have no impact on producing the desired effect on crime clearance rates.

Limitations

There are a number factors that limit the accuracy of the research. First, 54 law enforcement agencies did not accurately report all needed data; thus, these cities were excluded in the analysis of this research. Had the entire population representing 248 U.S. cities with a population of 100,000+ been included in the statistical analyses, more accurate results and conclusions regarding the impact of citizen participation on law enforcement organizational efficiency and effectiveness may have been provided.

Second, although the FBI’s Uniform Crime Reports (UCR), one of the foremost cited crime databases, have been largely used by the scholarly community in conducting research relating to crime and law enforcement, the UCR is not a perfect data source (Kappeler & Potter, 2005). First, the FBI uses “offenses known to law enforcement” to characterize crime which is often vague and difficult to interpret. Second, crime is
defined in differing ways by law enforcement agencies with some exaggerating the seriousness or non-seriousness that consequently develops a false impression of crime across the country. Third, UCR is open to political manipulation, or local crime may be reported as rising or falling depending on the political climate. In a similar way, bureaucratic requirements affect crime reporting given that the actual needs and requirements of law enforcement are simple to adjust. Fourth, UCR data are highly sensitive and can be affected by factors independent from crime. For example, computerization of records may portray a picture in which crime is skyrocketing when, in fact, there has been no increase. Finally, UCR data is far from being scientific and often tends to inflate statistics in a misleading way that shows crime more serious than it actually is thus affecting citizens’ perceptions.

Another limitation concerns the nature of Data Envelopment Analyses (DEA). DEA provides results about the efficiency of decision-making units included in the analyses. This research measured (through DEA) and used (in OLS) efficiency scores of law enforcement agencies. However, the scores reflected relative efficiency scores of agencies. In other words, DEA measures were relative to the efficiency scores of the cases included in the analyses. That is, efficiency scores found through DEA were relative to police agencies included in the analysis. A police agency that has a poor efficiency score in the analysis may not be inefficient compared to excluded cases.

There are a number of limitations regarding the variables used in this research. First, a comparison of 54 excluded cases from the selected cities and 194 included cases
showed that excluded cases, on average, had higher agency budgets and a higher police
officer ratio to population than included cases. Second, the police officer ratio to
population may not have indicated the actual number of street level officers whose
duties were to prevent crime and apprehend criminals as opposed to law enforcement
personnel who work in offices and deal with paperwork and administrative duties.
Although this may not appear to be a primary issue, the ratio of street officers to
population who are directly involved in crime prevention and crime clearance may have
provided a more accurate analyses regarding their impact on organizational efficiency
and effectiveness.

Police vehicle ratio to each city in proportion to population may have also
indicated similar concerns. In other words, the percentage of police vehicles that are
directly used to prevent crime and apprehend criminals may also affect crime rates and
crime clearance rates. However, since there are no such data, a limitation concerning
the accuracy of the impact those police vehicles have on police operations may be
distorted.

Although per capita income is an important factor indicating that crime rates
tend to be lower in cities where per capita income is higher, and crime clearance rates
are lower when per capita income is higher, there was no evidence taken from census
statistics regarding the distribution of economic prosperity in any given city. From this
perspective, crime rates in cities with a disproportionate distribution of wealth may
differ from cities where income is more proportionately distributed. Again, due to
unavailable data, more accurate information about the relationship between
distribution of income in cities and crime rates and crime clearance rates were not
reflected.

Statistical analyses in predicting crime rates by using citizen involvement, the
four control variables including police officer ratio, police vehicle ratio, agency budget,
and per capita income may involve a time order limitation given that four out of five
independent variables were positively correlated to crime rates while only per capita
income was negatively correlated to crime rates. This research, however, hypothesized
that all four variables would be negatively related to crime rates whereas the results of
statistical analyses provided the exact opposite revealing that citizen involvement and
the control variables were positively correlated to crime rates across cities. Accordingly,
a time order limitation seems very plausible that reverse causation is to blame for these
unexpected findings, or, higher crime rates may result in citizens to becoming more
involved that might lead to increases in budgets, number of police officers, and number
of police vehicles. From this point of view, one might argue that a reverse causation
exists in the model of predicting crime rates across U.S. cities.

The same can be said regarding the correlation between crime clearance rates
and agency budget. This study hypothesized that agency budget is positively related to
crime clearance rates, but statistical analyses revealed a negative relationship. Again,
time order might be the issue in that law enforcement agencies may have larger
budgets in cities where crime clearance rates are low. Had the all needed data,
continuous time models could have given more accurate picture about the correlation between predictors and dependent variable.

Recommendations for Future Research

For future research, important questions are raised concerning citizen participation in the production and delivery of public services and its impact on government agencies. First, this research consisting of 194 cities with a population of 100,000+ located in the United States revealed that citizen participation does not positively affect organizational efficiency and crime rates, contrary to the expected outcome. However, the results may be determined to be a factor of size and place. For example, larger cities were targeted in this research to test the relationship of civic engagement in law enforcement; however, the effect of citizen involvement may prove to be different in smaller cities. Percy (1987) argued that citizens in larger urban areas are likely to take individual precautions rather than collective initiatives against crime whereas smaller rural communities may be more willing to combine efforts against crime and criminals. From this perspective, additional research is needed to determine if citizen involvement produces different results in smaller cities. Same research is also needed to be replicated in other countries to find out whether citizen involvements’ impact depends on countries.

Because this research revealed that citizen participation in law enforcement does not lead to lower overall urban crime rates, future research should address the various aspects to determine if citizen involvement may be more successful in
preventing or reducing crime when dealing with specific types of crime. In other words, citizen involvement may help law enforcement to effectively prevent not all but some types of crime.

Kappeler and Potter (2005) argued that fear of crime in the United States has become a more significant issue than crime, not due to the common assumption of crime per se, but because of the increased fear of crime largely due to media portrayal of crime and politicians’ handling of the issue of crime. Citizen participation in the production and delivery of safety and security may affect fear of crime among citizens. Therefore, to test if citizen involvement has any impact on fear of crime, future research is recommended.

According to the findings in this research, citizen participation in the field of policing did not appear to result in the desired outcomes of law enforcement’s effectiveness and efficiency. Accordingly, this researcher can conclude that assumptions surrounding the theory of coproduction should be revisited in fields other than policing that may result in contradictory implications. Possibly, if measurements about the impact of citizen participation on organizational efficiency and organizational effectiveness are replicated in another area of public service, different conclusions might result. Possibly, policing, as a field, can result in different outcomes than other fields when citizens and public officials collaborate to produce and deliver public services since investigating crime and criminals and handling criminal evidence require technical training and qualifications that citizens lack of. From this point of view, the
researcher suggests that further research would contribute to the understanding of the relationship between citizen involvement and effectiveness and efficiency of public service.

Although a review of the literature revealed that citizen participation is higher in cities with greater per capita income, this research confirmed that there is no correlation or valid assumption to indicate that an association exists, at least not in the area of policing. Therefore, additional research should be conducted to determine if outcomes in other fields would differ.

Through further investigation of these issues in fields besides policing, more contributions and conclusive arguments can be provided. In addition, should future research reach dissimilar results in relation to the effects of citizen engagement mechanisms on organizational efficiency and effectiveness in other fields, one might argue that citizen participation does, in fact, produce differing results.

Conclusion

To a large extent, existing literature suggests that citizen involvement in government agencies provides numerous benefits including more efficient and effective public organizations. This researcher therefore tested the impact of citizen participation on law enforcement organizational effectiveness and found that when law enforcement agencies collaborate with citizens, crime clearance rates increase. Accordingly, citizen involvement is positively related to organizational effectiveness given that high crime clearance rates are associated with police effectiveness. On the other hand, when other
factors are controlled, citizen involvement did not have an effect on crime rates, contrary to arguments raised by the scholarly community. Interestingly, bivariate regression indicated that citizen involvement was positively correlated to higher crime rates. These two different findings indicate that the impact of citizen involvement on organizational effectiveness is controversial.

When the researcher tested the impact of citizen involvement on organizational efficiency, although law enforcement agencies were somewhat affected, the effect was found to be different from the anticipated. Contrary to expected, citizen involvement was positively related to organizational efficiency when bivariate correlations were run. More especially and certainly an interesting finding, when control variables were introduced, the relationship disappeared thus substantiating that citizen involvement has no statistically significant impact on efficiency of law enforcement agencies.

This research reveals that citizen involvement in policing is not positively related to law enforcement organizational efficiency. Coproduction’s effect on organizational effectiveness is controversial. However, agencies increasingly employ more citizens for coproduction. Consequently, one might suggest that although citizen participation programs are neither efficient nor effective and do not assist in the production and delivery of improved policing services, managers welcome citizens because joint coproduction is a common trend among the public sector through which law enforcement agencies can justify and legitimize their conduct as well as increase their
budgets in view of the fact that active citizen participation is equivalent to more citizenry support.

This research makes a notable contribution to the literature by confirming through statistical analyses that citizen involvement in the production and delivery of public services and goods and its effects on government agencies are overestimated and overvalued. Although joint collaboration between citizen-public employees produces some benefits, citizen involvement does not appear to represent a universal remedy for the issues and concerns faced by public agencies.
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