Measuring the organizational effectiveness of public-private partnerships: A Case study of the Department of Energy’s Clean Cities public-private partnership program

Sarah Gerace

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Measuring the Organizational Effectiveness of Public-Private Partnerships:  
A Case Study of the Department of Energy’s Clean Cities  
Public-Private Partnership Program  

by Sarah Jean Gerace  

Masters of Science  
Science, Technology and Public Policy  
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ROCHESTER INSTITUTE OF TECHNOLOGY  
Rochester, New York  

March 28, 2011  

Submitted by:  

Sarah Jean Gerace  

Accepted by:  

James Winebrake, Ph.D.  
Thesis Advisor  
Dean, College of Liberal Arts  
Professor, Department of STS/Public Policy  
Rochester Institute of Technology  

Franz Foltz, Ph.D.  
Committee Member, Graduate Coordinator  
Associate Professor, Department of STS/Public Policy  
College of Liberal Arts  
Rochester Institute of Technology  

Ann Howard, J.D.  
Committee Member  
Senior Associate Dean, College of Liberal Arts  
Professor, Department of STS/Public Policy  
Rochester Institute of Technology  

Deborah Blizzard, Ph.D.  
Acting Chair, Dept. of STS/Public Policy  
College of Liberal Arts  
Rochester Institute of Technology
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Thesis Committee:

Dr. James Winebrake  
Dr. Franz Foltz  
Professor Ann Howard

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“Measuring the Organizational Effectiveness of Public-private partnerships:  
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Title: Measuring the Organizational Effectiveness of Public-private partnerships: A Case Study of the  
Department of Energy’s Clean Cities Public-private partnership program

Author: Sarah Jean Gerace

Abstract

This thesis measures the organizational effectiveness of public-private partnerships (PPPs) by using the  
DOE’s Clean Cities PPP program as a case study. A survey was sent to 109 Clean Cities coordinators  
with questions pertaining to coalition characteristics and strategies. The survey results formed the basis  
for the analysis of the effectiveness of the coalitions. Coalitions can have an independent or subsidiary  
organizational structure. Furthermore, the broad/overarching organizational structure of Clean Cities  
coalitions serves as an important characteristic that determines a coalition’s organizational operations. In  
measuring the Clean Cities program in terms of organizational effectiveness, the structure of coalitions  
(e.g., independent and subsidiary) appeared to be a central variable to use in differentiating the coalitions.  
By examining statistically if independent and subsidiary coalitions were the same or different across  
several categories (e.g., coalition characteristics and collaboration success with various stakeholders), this  
research found that the broad/overarching organizational structure made no difference in the ability of  
members to deliver results successfully. However, some differences were found in examining if  
subsidiary and independent coalitions were the same or different across other categories that could not be  
examined statistically, such as other coalition characteristics and the strategies members use in carrying  
out their organization’s mission statement. From this analysis, it can be concluded that even though a  
coalition’s broad/overarching structure makes little to no difference in determining organizational  
success, how an organization’s internal structure is developed and/or managed was found to be important  
to members in delivering results successfully. A coalition’s internal organizational structure refers to the  
strategies members use to get work done and fulfill their missions. A coalition’s internal structure and  
other key characteristics of success highlighted by survey respondents were consistent with findings in the  
literature describing the success factors for public-private partnerships.

Keywords: Public-private partnerships, The Department of Energy’s Clean Cities Public-private  
partnership program, Clean Cities coordinators, Independent coalition, Subsidiary coalition

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Table of Contents

Chapter 1 .............................................................................................................................................. 3
  1.1 Introduction ..................................................................................................................................... 7
  1.2 Research Questions ......................................................................................................................... 10

Chapter 2 ................................................................................................................................................ 13
  2.1 Public-Private Partnerships ............................................................................................................ 13
  2.1.1 Overview PPP Advantages and Partnership Types .................................................................. 13
  2.1.3 Contracts .................................................................................................................................... 15
  2.1.4 Advantages from Private Sector Involvement with Public Projects ........................................ 16
  2.1.5 Government-Nonprofit Partnerships ......................................................................................... 16

Chapter 3 .................................................................................................................................................. 16
  3.1 Methodology ................................................................................................................................... 16
  3.1.1 Data Collection Methods ........................................................................................................... 36

Chapter 4 .................................................................................................................................................. 36
  4.1 Description of Survey Results ........................................................................................................ 47
  4.2 Statistical Tests Model Validation: Clean Cities Coalition Characteristics .................................. 49
    4.2.1 Statistical Results for Two-Sample T-Test: Coalition Characteristics .................................... 53
    4.2.2 Statistical Results for Mann-Whitney Test: Coalition Characteristic Category Staff ............. 54
“Measuring the Organizational Effectiveness of Public-private partnerships: A Case Study of the Department of Energy’s Clean Cities Public-private partnership program”

4.3 Statistical Tests Model Validation: Clean Cities Coalitions Collaboration Success Ratings for various Stakeholders ................................................................. 55
4.3.1 Statistical Results for Mann-Whitney Test: Coalitions Collaboration Success Ratings for various Stakeholders ........................................................................... 57
4.3.2 Statistical Results for \( \chi^2 \) Test: Coalitions Collaboration Success Ratings for various Stakeholders .............................................................................................. 59
4.4 Clean Cities Committees: Independent Coalitions ................................................................................................................................. 61
4.4.1 Comparison: Population Sizes of the Village/Town/City where Coalitions are Located and ...... 67
Clean Cities Strategies ........................................................................................................................................................................ 67
4.4.2 Coalition Methods ........................................................................................................................................................................... 69
4.4.3 Comparison: Member(s) Responsible for Disseminating Coalition Information and How often 70
Coalition holds meetings with their Decision-making members ........................................................................................................ 70
4.4.4 Coalition Recruiting Methods ......................................................................................................................................................... 72
4.4.5 Coalition Recruiting Difficulties ....................................................................................................................................................... 75
Chapter 5 .......................................................................................................................................................................................... 77
5 Content Analysis of Survey Responses ........................................................................................................................................ 77
5.1 Respondents Recommendations: The Key Characteristics that should make the Clean Cities Program Successful ...................................................................................... 78
5.1.1 Internal Organizational Influences ................................................................................................................................. 78
5.1.2 External Organizational Influences ................................................................................................................................. 85
5.2 Clean Cities Coalition Goal Measures ......................................................................................................................................... 88
Chapter 6 .......................................................................................................................................................................................... 90
6 Recommendations for Independent and Subsidiary Organizational Structures and Implications .............................................................. 90
6.1 Independent and Subsidiary Organization Recommendations ........................................................................................................ 90
6.1.1 Examine the Broad/overarching Organizational Structure of Collaborative partners- The Case of Contracting Organizations ........................................................................................................... 90
6.1.2 Focus on the “Needs” of Stakeholders and the Community ........................................................................................................... 91
6.1.3 Analyze the Collaborative Environment .................................................................................................................................. 92
6.1.4 Develop Formal Agreements .................................................................................................................................................... 94
6.2 Implications ................................................................................................................................................................................... 95
Chapter 7 .......................................................................................................................................................................................... 98
7 Conclusion, Research Limitations, and Recommendations for Future Research ......................................................................................... 98
7.1 Conclusions .................................................................................................................................................................................... 98
7.2 Limitations of Study .................................................................................................................................................................... 99
7.3 Recommendations for Future Research ....................................................................................................................................... 103
8 References ....................................................................................................................................................................................... 105
9 Appendixes .......................................................................................................................................................................................... 109
9.1 Appendix A1: Survey Cover Letter ............................................................................................................................................... 109
9.2 Appendix A2: Clean Cities Coordinator Survey ......................................................................................................................... 111
9.3 Appendix B1: Number and Percentage of Respondents from Independent and Subsidiary Coalitions that answered Survey Questions .......................................................................................... 120

List of Figures
Figure 1: Number of Committees by Type for Coalitions with Committees ................................................................. 61
Figure 2: Independent Coalitions- Comparison of the Number of Committees and Coalitions Collaboration Success Ratings for Schools (K-12), Post-secondary schools, and Non-profits ................. 62
Figure 3: Independent Coalitions- Comparison of the Number of Committees and Coalitions Collaboration Success Ratings for Schools (K-12), Post-secondary schools, and Non-profits ................. 63
Figure 4: Independent Coalitions- Comparison of the Number of Committees and Coalitions
Collaboration Success Ratings for Regional Planning Organizations (RPOs), Metropolitan Planning
Organizations (MPOs), and Trade Associations..........................................................64
Figure 5: Independent Coalitions- Comparison of the Number of Committees and Coalitions
Collaboration Success Ratings for Regional Planning Organizations (RPOs), Metropolitan Planning
Organizations (MPOs), and Trade Associations ..........................................................65
Figure 6: Independent Coalitions- Comparison of the Number of Committees and Coalitions
Collaboration Success Ratings for Local Government entities and Large Businesses .............66
Figure 7: Independent Coalitions- Comparison of the Number of Committees and Coalitions
Collaboration Success Ratings for Local Government entities and Large Businesses .............66

List of Tables
Table 1: Two-Sample T-Test Categories ........................................................................48
Table 2: Mann-Whitney Test and χ² Test Categories .........................................................48
Table 3: Two-Sample T-Test: Statistical Results for Coalition Characteristics ..................53
Table 4: Mann Whitney Test: Statistical Results for Coalition Characteristic Category Staff ....54
Table 5: Mann-Whitney Test: Statistical Results for Coalitions Collaboration Success Ratings for various stakeholders ..................................................................................57
Table 6: χ² Test: Statistical Results for Coalitions Collaboration Success Ratings for Federal Government ...............................................................59
Table 7: χ² Test: Statistical Results for Coalitions Collaboration Success Ratings for Schools (K-12) ...59
Table 8: Independent Coalitions- Comparison of the Population Sizes of Village/Town/City where Coalitions are Located and Clean Cities Strategies ........................................68
Table 9: Subsidiary Coalitions- Comparison of the Population Sizes of the Village/Town/City where Coalitions are Located and Clean Cities Strategies ........................................68
Table 10: Independent Coalitions- Member(s) Responsible for Disseminating Information and How often Coalitions hold meetings with their Decision-making members ........................................70
Table 11: Subsidiary Coalitions- Member(s) Responsible for Disseminating Information and How Often Coalitions hold meetings with their Decision-making members ........................................71
Table 12: Independent Coalitions- Recruiting Methods ....................................................73
Table 13: Subsidiary Coalitions- Recruiting Methods .......................................................74
Table 14: Independent Coalitions- Recruiting Difficulties Experienced .............................76
Table 15: Subsidiary Coalitions- Recruiting Difficulties Experienced ....................................76
Table 16: Survey questions about coalitions membership size and population size where coalitions are located .................................................................................................120
Table 17: Survey questions about the Clean Cities Coordinator and Coalition Committees ..........121
Table 18: Survey questions about coalition strategies, methods, and meetings held with decision-making members ..................................................................................122
Table 19: Survey questions about disseminating information, coalition recruiting strategies, and recruiting difficulties ..................................................................................123
Chapter 1

1 Introduction and Research Questions

1.1 Introduction

Public private partnerships (PPPs) provide one mechanism for achieving social goals. Government involvement in developing and/or managing partnerships can provide communities with the necessary resources to pursue various initiatives. Therefore, the use of partnerships may become more prevalent as government seeks to address complex community problems.

One reason to investigate PPPs is to understand the relationship between government problem solving and the use of these organizations. However, as government becomes more involved in these partnerships, public officials should become aware of their strengths and weaknesses as well as the various ways these partnerships can be organized. Policy-makers also need to acknowledge that the stakeholders involved in running these partnerships each have different goals, strategies, and resources that shape how these partnerships are used.

According to Koppenjan and Enserink (2009), “public-private partnerships” have been described as the collaboration of both public and private sector entities with similar interests that are working together on various projects (285). One advantage of the government working with the private sector is that public officials will have the opportunity to become more involved in technological projects. In the process, government will be able to better understand technological operations as well as how to improve efficiency in public sector programs/services. This interaction will also provide new opportunities for public stakeholders by allowing these people to access additional sources of funding when exploring new projects. Therefore, PPPs are important because these partnerships can improve government’s accountability to the public through obtaining resources from the private sector, which helps in effectively solving community issues (Koppenjan & Enserink, 2009, p. 285).

As public and private stakeholders work together, they will each come across many challenges in pursuing their individual goals (Koppenjan & Enserink, 2009, p. 293). One challenge includes the difficulty in finding a middle ground between private investment goals and public needs. In addition, as communities are trying to reach goals, such as energy efficiency, there is also a need for a “institutional framework” that merges the different public and private regulatory and management structures including, but not limited to, the social, economic and financial sectors (Koppenjan & Enserink, 2009, p. 293).
“Measuring the Organizational Effectiveness of Public-private partnerships: 
A Case Study of the Department of Energy’s Clean Cities Public-private partnership program”

Others define PPPs differently. In describing “public-private partnerships”, Link (2006) refers to the term “public” as involving government or public sector assets and the term “private” as consisting of private sector assets (1). In this definition, the term asset refers to “financial, infrastructure, and research resources”. Partnerships have also been referred to as “innovation-related relationships” which involves public and private actors collaborating on various R&D initiatives (Link, 2006, p. 1). According to the National Research Council,

“[P]ublic-private partnerships involving cooperative research and development among industry, government, and universities can play an instrumental role in introducing key new technologies to the market… [Partnerships] often contribute to national missions in health, energy, the environment, and national defense and to the [N]ation’s ability to capitalize on its R&D investments” (Link, 2006, p. 2).

PPPs have also become more prevalent for several reasons. Teisman and Klijn (2002) discuss how one reason is due to new network societies developing that encourage citizens to demand more involvement in government decision-making. Because of these demands, the private sector has undertaken a more customer-driven attitude, encouraging the need for more partnerships and other forms of alliances (Teisman & Klijn, 2002, p. 199).

There are several public policy and technological innovation advantages associated with the diversity of both public and private stakeholders that are involved with public-private initiatives and/or projects. Kettl (2000) discusses how one public policy advantage is these partnerships can encourage decentralized decision-making (D. F. Kettl, 2000, p. 23). Decentralization is when the departments or divisions within an organization have power in the decision-making possibly leading to the exchange of several different ideas as various parties participate in the process of solving issues and completing projects. Some disadvantages associated with decentralized decision-making are that public officials may have both a difficult time acknowledging all interests as well as controlling the diverse collaborative environment.

Elsig and Amalric (2008) highlight how another policy advantage is of partnerships reducing the costs of implementing policies and/or regulations and in the process serving as “information channels”. As partnerships serve as information channels, new information is distributed to the public and private sectors helping enhancing network operations (Elsig & Amalric, 2008, pp. 398-399). The primary goal of these partnerships is to fill the “existing gaps” within government’s policy initiatives through their stakeholders who possess different ideas, skills, and strategies (Elsig & Amalric, 2008, p. 404).
Johnston and Romzek (2005) discuss how “government contracting out” to various organizations and requiring these entities to complete several public tasks has several advantages and disadvantages (446). One advantage from the government becoming less involved in public service delivery is that other organizations will be able to provide funds as well as manage services more effectively allowing government to focus more on improving accountability to the public. However, some disadvantages are that contractors may abuse the system and intentionally try to reduce government involvement in public sector activities (Johnston & Romzek, 2005, p. 446).

In relation to science and technology policy (S&T), PPPs serve as a major vehicle for addressing present S&T issues. The Clean Cities program is a good case study to use because this organization is addressing a significant S&T issue: reducing petroleum consumption. The Clean Cities program is an example of how partnerships can be used to evaluate the application of new technologies and to access funds to help government as well as the private sector explore new research areas (“Starting Coalitions,”). “Clean Cities is a government-industry partnership sponsored by the U.S. Department of Energy’s (DOEs) Vehicles Technologies Program” (“About the Program,”). The goal of Clean Cities PPP program is to encourage communities to use environmentally friendly alternative fuel vehicle technologies. Therefore, Clean Cities is considered to 1) help communities collectively solve problems and 2) provide the means to help communities progress forward with S&T initiatives (“Mission and Background,”).

The Clean Cities Program has been evaluated in several different ways. Each year all 109 Clean Cities coalitions submit an annual report describing their overall progress and accomplishments. National Clean Cities prepares an annual report summarizing the progress of these coalitions. Specific Clean Cities programs such as the biofuel station initiative program have been evaluated individually (“Clean Cities Organizations in New York State,”). However, to date, there have been no studies or evaluations of this program that examine the broad/overarching organizational structure of Clean Cities coalitions or any analysis of the determined key characteristics that contribute to this program’s success as PPP.

The Clean Cities coalition members manage many projects, serve as “information channels” by distributing literature about the current state of the alternative fuel vehicle technology market and represent the interests of many stakeholders (e.g.; public officials, private businesses) while engaging in various collaborative interactions. The Clean Cities members also promote new policy initiatives and assist in the policymaking process. Therefore, the information coalitions provide can be useful in improving current government public policy initiatives (Elsig & Amalric, 2008, pp. 398-399, 404).
The topic of this research project is measuring the organizational effectiveness of PPPs by using the DOE’s Clean Cities PPP Program as a case study. A survey was sent to 109 Clean Cities coordinators with questions pertaining to coalition characteristics and strategies. The survey results formed the basis for the analysis of the effectiveness of the coalitions. The Clean Cities program was chosen because this organization is meant to be a PPP according to DOE’s expectations.

Clean Cities is a unique program to investigate because this organization consists of several different coalitions. These coalitions all have the same mission, which is to meet the tasks or requirements set forth by National Clean Cities and the DOE. These tasks can involve coalition members using various strategies to encourage the public to reduce their petroleum consumption by adopting alternative fuel vehicle technologies. The Clean Cities coalitions can operate as an independent organization or as a subsidiary of another organization. An independent coalition is an organization that is stand-alone and is not associated or connected to another participating organization. A subsidiary coalition is an organization that is associated or connected to another partnership entity or participating organization such as the American Lung Association. The broad/overarching organizational structure of Clean Cities coalitions serves as an important characteristic that determines a coalition’s organizational operations. The term organizational operations refer to the characteristics and strategies that represent the DOE’s Clean Cities PPP program. In measuring the Clean Cities program in terms of organizational effectiveness, the structure of coalitions (e.g., independent and subsidiary) appeared to be a central variable to use in differentiating the coalitions.

1.2 Research Questions

The research questions for this thesis are the following:

1) Are public-private partnerships structured as standalone or independent of participating organizations the same or different as coalitions structured as a subsidiary of partnership entities in terms of organizational effectiveness and operations?

2) What are the key characteristics that should make public-private partnerships successful?

Quantitative methods were used to examine and compare these coalitions across several categories such as coalition characteristics and indicators of success. Data was collected through an electronic survey sent to the Clean Cities coalition coordinators. Qualitative methods were also used to examine coalitions across several other categories that could not be examined statistically such as other coalition
characteristics and the strategies coalition members use in carrying out their organization’s mission statement.

This thesis also determined key characteristics that should make the Clean Cities program successful. These characteristics were identified by examining the respondents’ answers from the survey in selected categories and by reviewing literature discussing the characteristics that make PPPs successful. A list of recommendations is provided describing these characteristics.

The Clean Cities coordinator survey provides descriptive information such as the overall picture of how the program works (descriptive research question) and normative information describing how the program should be performing (normative research question). Therefore, the data/results are presented indicating the current progress of the program and describing what indicators should lead to organizational success (Designing Evaluations, 1991, p. 7).

Some terms frequently used throughout this thesis in describing the Clean Cities PPP program are defined below:

1) **A Coalition**: A group of public and private stakeholders that work together on various projects, initiatives, all with a mission to reduce petroleum use in the transportation sector ("About the Program,").

2) **A Subsidiary Coalition**: An organization that is associated or connected to another partnership entity or participating organization such as the American Lung Association.

3) **A Independent Coalition**: An organization that is stand-alone and is not associated or connected to another participating organization.

4) **Organizational Operations**: The organizational characteristics and strategies that represent the DOE’s Clean Cities PPP program.

5) **Coalition Decision-making members**: A board member, a stakeholder, or other organizational member that is involved in setting goals and making decisions for the organization.
6) **Coalition Stakeholders:** These members do not have the same responsibilities as a coalition decision-making member.
Chapter 2

2 Literature Review

The literature reviews focused on the following: 1) the different types of PPPs and their organizational operations, the advantages and disadvantages of partnerships and/or contracts, and the advantages from having the private sector help administer public projects, 2) independent and subsidiary organizational operations and the different approaches public and private actors can take in running these organizations, 3) how to develop survey questions, what to take into account when using electronic surveys, specific procedures to follow when administering a survey, and the best ways to examine data output from a survey. There is also a discussion of the advantages, disadvantages, internal and external validity issues associated with using a sample survey design, 4) the purpose of performing an evaluation and different types of evaluation approaches, and 5) how the Clean Cities program works and/or operates. Material was reviewed providing a broad overview of how this program runs as well as a detailed description of this organization’s operations. Clean Cities studies were also reviewed and summarized to understand other ways this program has been examined or evaluated.

The information reviewed highlighted the different qualities of PPPs, key success factors, and the overall theoretical foundations associated with partnerships. In addition, by reviewing this information detailed certain organizational characteristics highlighting the current state of partnerships and Clean Cities as a PPP. The information reviewed about designing surveys and conducting evaluations identified appropriate ways to measure the organizational effectiveness of PPPs while using a sample survey as a research tool.

2.1 Public-Private Partnerships

2.1.2 Overview PPP Advantages and Partnership Types

There are several advantages associated with PPPs. Pamela Bloomfield (2006) describes how the government can use these partnerships as a way to control private market forces (401). However, in order to control the market through these partnerships, the government needs to develop incentives that encourage private actors to increase their efficiency and performance. Therefore, the ultimate goal in developing these incentives is to enhance the various technical aspects of services that are provided to the public (Bloomfield, 2006, p. 401). Hodge and Greve (2007) also highlight how these partnerships could reduce constraints on public budgets due to the government using private resources to achieve policy initiatives (548). Denhardt and Denhardt (2009) insist that the one advantage of government becoming
Measuring the Organizational Effectiveness of Public-private partnerships: 
A Case Study of the Department of Energy’s Clean Cities Public-private partnership program

more involved with these partnerships is the public sector will be able to become part of as well as learn about new technological breakthroughs (Denhardt & Denhardt, 2009, p. 110).

The use of PPPs has proven to have different effects on all levels of government. Bloomfield highlights how “long-term public-private partnerships” help government establish more infrastructure projects. These infrastructure projects are created through “risk-sharing agreements” which divide public and private sector responsibilities (Bloomfield, 2006, p. 403). However, these contracts may not be beneficial at the local level when there is a lack of time and resources to administer these partnerships. Therefore, in order for local governments to gain the full advantages from using long-term PPPs, public officials need to improve their “accountability and transparency structures”. Furthermore, the public needs to remain informed of how these public-private interactions will help achieve current community initiatives. In addition, by improving these structures, public officials will be able to better address new concerns and/or issues associated with the development of these partnerships (Bloomfield, 2006, pp. 409-410).

Clean Cities works with local, state and national entities and the type of partnerships developed are similar to “long term public-private partnerships” (Bloomfield, 2006). Long term PPPs are important to examine in respect to the Clean Cities case, because having knowledge of these partnerships successes and failures can be helpful in 1) determining the organizational effectiveness of the Clean Cities program and 2) understanding the overall focus the Clean Cities coalitions. In addition, examining how long term partnerships have overcome challenges can be useful in determining how Clean Cities can improve their organizational operations.

Kettl (2002) discusses how more governments across the globe have been becoming involved with the private sector by increasing their participation in both developing and managing PPPs (D. Kettl, 2002, p. 63). However, by governments becoming more involved with partnerships, had also lead to an increase in the number of specialized partnerships. One reason partnerships are becoming more specialized is to separate the stakeholders whose goal is promoting policy positions from those that have responsibility in monitoring the use of public funds for various projects. Another reason for the increasing trend in the number of specialized PPPs is that more people are focusing on advocating their policy interests as opposed to making efforts to improve the efficiency of government functions (Hodge & Greve, 2007, pp. 553-554).

Hodge and Greve further highlight how specialized partnerships organizational operations involving financing are different compared to traditional partnerships. Partnership specialization has also shown to
create a top-down approach in government decision-making. However, if governments do not institute a centralized managing framework then the focus will shift to adopting a “bottom-up approach” to decision-making allowing local stakeholders to advocate and exercise new organizational strategies/approaches (Hodge & Greve, 2007, pp. 553-554).

The Clean Cities program’s operations are similar to the organizational operations of specialized PPPs because these coalitions both promote certain policy positions, such as energy efficiency and help manage alternative fuel vehicle technology projects, initiatives. Specialized partnerships have also been found to work differently than traditional PPPs and therefore, understanding how these partnerships work can determine Clean Cities organizational structure and how this structure influences the type of strategies coalition members use to complete various assignments (Hodge & Greve, 2007, pp. 553-554).

2.1.3 Contracts

The DOE acts as a program provider to the Clean Cities program and contracts with each of the coalitions. These contracts serve an important role in monitoring public and private collaborative interactions. Ghere (2006) discusses how contracts ensure that all collaborators remain responsible and take appropriate actions while completing various projects, initiatives (3). In managing contracts, government must also act as a “smart buyer” continually making sure there are no noncompliance or abuse issues. However, other challenges may arise such as market failure on both the supply and demand sides. For the supply side, public officials cannot collaborate with all stakeholders. Therefore, public officials must choose which stakeholders to partner with based on how much influence or power these people have in the marketplace. For the demand side, public officials sometimes make policy decisions that are not be supported by their nongovernmental assistants (Ghere, 2006, p. 3).

With respect to the Clean Cities case, examining contract interactions can determine the responsibilities of the program’s public and private collaborators. In addition, by 1) having knowledge of the advantages and disadvantages associated with contracts and 2) being informed of what leads to contract success or failure identifies how to design supportive contracts allowing for collaboration effectiveness. This information can also be useful in understanding Clean Cities current progress or successes as well as parts of the program needing the most improvement.
2.1.4 Advantages from Private Sector Involvement with Public Projects

According to E.S. Savas (2000), there are several advantages from having the private sector help government administer infrastructure or technical projects and some are the following: 1) the private sector is able to build or follow through with projects more quickly at a lower cost. However, the public sector or public officials must acknowledge all policy procedures as project decisions are being made and address any “bureaucratic constraints” that develop, 2) the government can share the risks and costs with other parties, 3) private stakeholders can give public stakeholders advice or recommendations on how to improve public management of various projects (Savas, 2000, pp. 240-241).

As for the Clean Cities case, understanding the advantages in having the private sector help government develop infrastructure or administer technical projects identifies the different ways Clean Cities collaborators skills, experience, and knowledge is of value to one another. In addition, having knowledge of the public and private stakeholders that Clean Cities members interact with most highlights how these people influence a coalition’s organizational structure and most commonly used strategies.

2.1.5 Government-Nonprofit Partnerships

A government-nonprofit partnership is another type of partnership with organizational operations different from traditional PPPs. Jennifer M. Brinkerhoff (2002) defines this type of partnerships as following:

“A dynamic relationship among diverse actors, based on mutually agreed objectives, pursued through a shared understanding of the most rational division of labor based on the respective comparative advantages of each partner. Partnership encompasses mutual influence, with a careful balance between synergy and respective autonomy, which incorporates mutual respect, equal participation in decision making, mutual accountability and transparency” (21).

The goal of these partnerships is to provide and administer effective government services/programs and in the process encourage their stakeholders to take part in normative based public participation. Brinkerhoff insists that promoting this type of public participation results in the development of “values-based partnership principles”. However, one concern regarding these partnerships is whether “value-based principles” revolving around subjective means are appropriate for managing certain organizational operations (Brinkerhoff, 2002, pp. 21-22).

Steven Rathgeb Smith (2008) highlights the increase in the number of government-nonprofit partnerships serving to provide better quality public services. This increase in government-nonprofit
partnerships is due to the growth of voluntary groups and associations over the last few decades. However, due to certain restrictions, most nonprofits are not politically active. In addition, some nonprofits do not have the appropriate resources to become politically active while for other organizations, becoming politically active is not a prime goal (Smith, 2008, pp. s135, s140). Furthermore, government’s goal is to improve accountability to the public while providing various services. Smith insists that improvement in government’s accountability can only be accomplished through working with nonprofits. However, government can improve accountability only if public entities help nonprofits improve their transparency and accountability structures as services are being delivered. When working with nonprofits, public officials should also acknowledge how such arrangements influence government processes (Smith, 2008, pp. 139s, 142-143s).

The collaboration of public, private, for-profit, and non-profit stakeholders on various social initiatives, creates many new networks and policy dimensions. Kettl (2000) notes that the merging of public, private, and nonprofit organizations results in the “governmentalization of the private sector” (23-24). The term “governmentalization of the private sector” refers to different societal entities undertaking both direct and indirect responsibilities as their members participate in the development of government programs and services. These collaborations promote decentralized decision-making and encourage the development of new policy strategies needed to monitor and/or control collaborative interactions. Furthermore, one result of public/private collaborations is the need for small policy adjustments resulting in what is called a “quiet crisis”. This “quiet crisis” creates entirely new issues for the government and the administration to confront (D. F. Kettl, 2000, pp. 23-24).

Kettl further highlights that as the government tries to solve the issues associated with a “quiet crisis”, public officials develop new ways of understanding “network-based relationships” (D. F. Kettl, 2000, pp. 23-24). “Network-based relationships” develop through contracting or by developing partnerships and refers to the formal and informal interconnections between organizations as their stakeholders strive to achieve similar goals. These networks also consist mainly of government officials, for-profit and non-profit entities. The importance in examining these network theories is to help administrators determine appropriate ways to investigate the relationship of “political power and representative democracy” and to identify the influence this relationship has on the development of PPPs (D. F. Kettl, 2000, p. 24).

The Clean Cities PPP program is most similar to government-nonprofit partnerships consisting of voluntary groups and associations. Government-nonprofit partnerships have different ways of influencing government processes and therefore, examining these influences can determine the role of these
partnerships. Furthermore, acknowledging these influences can determine how the Clean Cities program helps communities and the different ways the coalitions affect community processes. In addition, government-nonprofit partnerships have shown to need several improvements in order to be of value to government entities (Smith, 2008, pp. 135, 139, 140, 142-143). Therefore, understanding how these partnerships can be improved will identify how to enhance Clean Cities organizational operations.

The Clean Cities program encourages decentralized decision-making and therefore, some researchers claim that understanding these interactions are essential to making appropriate organizational improvements. Through examining the Clean Cities program, this thesis determined these interactions and the type of strategies or approaches needed in order for this partnership to continue experiencing successful outcomes. In addition, understanding “network theories” determines the different influences promoting certain collaborative interactions thus, shaping the development of PPPs (D. F. Kettl, 2000, pp. 23-24).

2.2 Independent and Subsidiary Organizational Structures

The Clean Cities coalitions can have an independent or subsidiary organizational structure. The broad/overarching organizational structure of coalitions determines the strategies members use as they carry out various activities. After using the structure of coalitions to differentiate the coalitions, further examination of independent and subsidiary organizations operations seemed necessary. The information provided in this section did not come from the Clean Cities coordinator survey and does not reflect respondents’ views of purpose, role, and/or overall focus of independent and subsidiary coalitions.

The following literature examines independent and subsidiary organizational operations in purpose of understanding how these organizations work. This literature identifies 1) when independent and subsidiary organizational structures are most appropriate as well as 2) the different approaches public and private actors can take in running these organizations. In section 6.1 Independent and Subsidiary Organization Recommendations are recommendations for independent and subsidiary organizations. In reviewing this information, the content analysis findings for this research project were consistent with the literature highlighting how these organizations can be different.
2.2.1 Managing Partnerships: Contracts

Gazley (2010) highlights that one important structural characteristic of partnerships is the presence of contracts (655). In some cases, a third party may manage partnership operations and encourage members to finish projects/assignments using any method possible as opposed to having members follow “formal agreements” designed to help administer collaborative interactions effectively. However, the type of “managerial control” used by the parties in charge is based on the entities or organizations that provide the partnership with funding and the type of leadership styles used. In addition, the use of “formal agreements” or contacts serves as a sign of success but have not been found to influence collaborative performance (Gazley, 2010, pp. 655, 688).

2.2.2 Types of Community Coalitions

The Clean Cities coalitions are most similar to “community coalitions” and Kenneth Bickers (2007) discusses how these coalitions “…are not governable by a singular politically established superordinate” (167-168). Because of the structure of community coalitions, sometimes government can have a difficult time exercising their command and control structures over these “decentralized clusters of community organizations” as well as their collaborators each making efforts to deliver services and facilitate community activities (Bickers, 2007, p. 168).

Louise White (1986) highlights how local community groups or coalitions have been increasing their presence in communities each with different goals and structures. Similar to Clean Cities independent coalitions, these community groups focus on, “community transformation” or addressing community interests, pursuing development projects, and improving their stakeholder base by increasing the number of people participating in their organization’s activities (White, 1986, pp. 239, 241). These community groups’ members are involved mostly with identifying, examining, and solving community issues. In addition, these community groups tend to have much more autonomy in making decisions, promote “self reliance”, and use “grass-root problem solving” strategies as their members confront community issues. For this type of community group, success is defined in terms of the ability of their members to preserve their autonomy and obtain resources when needed to address their stakeholders needs (White, 1986, pp. 239-241).

In addition, like Clean Cities subsidiary coalitions, these community groups can also work side by side with government entities while their members have much less autonomy in making decisions (White, 1986, pp. 239, 241). These community groups are focused on enhancing service delivery as opposed to
solving community problems. Furthermore, these community groups frequently receive government support and take advantage of opportunities government provides. These types of community groups are most similar to agency-based coalitions where professionals from various institutions determine the coalitions work. Lastly, public administrators tend to prefer to work with organizations that frequently seek government support because of their efficient service delivery methods (White, 1986, pp. 239, 241).

With respect to how these community coalitions are formed, the government will sometimes develop coalitions and allow their members to have more autonomy in decision-making. However, in other situations, a community may develop a coalition but need government support in order for their members to continue pursuing various initiatives (White, 1986, p. 240).

2.2.3 Stand-alone Coalitions

Coalitions determine which organizational structure is most appropriate based on the needs of their stakeholders (Bickers, 2007, pp. 169-170). Furthermore, Clean Cities coalitions with a standalone or independent organizational structure are most appropriate for helping stakeholders with “stand-alone needs”. Therefore, members from independent coalitions should be able to address their stakeholders “stand-alone needs” with their own organizational resources. However, in some cases, independent coalitions helping stakeholders with “stand-alone needs” will collaborate with other coalitions that have both similar interests and an organizational structure as well as the time to address both their members and clients needs (Bickers, 2007, pp. 169-170).

In addition, involvement with local independent coalition activities requires time and commitment by all interested parties. However, organizational leaders will only remain committed to coalition activities if their members are working on initiatives or projects related to the needs of their members and stakeholders (Bickers, 2007, p. 170).

Furthermore, through local coalition meetings private and public leaders can identify the best practices for delivering services (Bickers, 2007, p. 186). In addition, coalition meetings help the public understand different ways organizations have helped their communities as well as the quality of their efforts too. Therefore, the organizations involved in contracting that have stand-alone needs will gain most from their increased participation in independent coalition activities or meetings because their members will benefit from remaining informed of the quality of service delivery as well as the current difficulties experienced by their contracted agents (Bickers, 2007, p. 186).
2.2.4 Independent and Dependent Organizational Processes

Smutny and Takahashi (2001) discuss how organizations can have independent or differentiated processes and integrated or dependent processes (148). With respect to the Clean Cities program, independent coalitions have independent or differentiated processes and subsidiary coalitions have integrated or dependent processes. One benefit of organizations having independent or differentiated collaboration processes is that both parties will be exposed to a variety of unique and different skill sets. In addition, for independent or differentiated processes, both parties do not have to interact often but will be involved with several ongoing tasks necessary to achieve all collaborative goals. On the other hand, integrated or dependent collaboration processes require frequent oversight and interaction among parties in order for all desired goals to be achieved. However, integrated or dependent processes can only occur if both parties have similar “….organizational norms, operating procedures, staff knowledge, and skills for effective task implementation” (Smutny & Takahashi, 2001, p. 148).

Furthermore, “…in terms of independent and dependent tasks, the funding mechanisms should be consistent with the degree of independence to minimize the incentives for integrated task implementation” (Smutny & Takahashi, 2001, p. 150). Therefore, one way to avoid organizational problems is to ensure collaborative efforts are well funded, thus allowing members to use the appropriate strategies needed to facilitate collaborative interactions effectively (Smutny & Takahashi, 2001, p. 150).

2.3 Survey Design Literature Review

For this research project, a “web-based survey” design was used to examine the organizational effectiveness of PPPs. According to Powell and Hermann (2000) and Powell, Rossing, and Gerna (1998), these types of surveys should only be used when 1) the people being surveyed are familiar with and have access to the internet, 2) technical help or support is readily available given internet issues arise, and 3) the participants can be easily contacted by electronic mail. In addition, web or electronic surveys should include a website link for participants to access the survey (Powell, Rossing, & Geran, 1998, p. 134) (Powell & Hermann, 2000, p. 6).

The Clean Cities coordinator survey used was a specific source survey. A specific source survey is used when information is needed from a certain selection of people who can provide valuable knowledge about the subject matter under investigation. These people may also represent a group of people and obtaining their input would help represent the opinions of others, too. For this research, the target population is the
Clean Cities coordinators who can provide valuable information about various ways the program works (Powell et al., 1998, p. 135).

In designing a survey to obtain information about a program, the surveyor should first decide what is known, unknown, and unclear about the program being evaluated (Powell & Hermann, 2000, p. 7). Second, the surveyor should determine what needs to be known about the program and what is not as important but could valuable information in the future. Third, the surveyor must ensure that the respondents are able to understand as well as answer all survey questions. In some cases, people may not have enough knowledge about certain survey topics or they may not remember the topic. Therefore, in these situations, the surveyor should 1) find other information to use or 2) get rid of the topic completely. Lastly, the surveyor should not put topics in a survey that will not provide valuable information or be addressed later when developing final conclusions about a program’s overall progress (Powell & Hermann, 2000, p. 7).

Powell (2002) describes additional preparation steps to take when designing and administering a survey (1). First, the surveyor should state the purpose of the survey to the participants and frame questions in way that encourages the participants to take time and complete the survey. Second, the surveyor should pilot-test the survey on people who have a similar background as the participants targeted for the survey. There should also be a cover letter describing the purpose of the survey and the value gained from surveying the population targeted. Third, the surveyor should “assure confidentiality” (Powell, 2002, p. 1).

Powell and Renner (2003) note that after the data has been collected the surveyor must first decide which information to use (2). In this step, the surveyor must determine and separate information that is valuable or useful and information that is not useful based on the goals of the research project. In this step, the surveyor should also determine the type of analysis that will be used to evaluate the data collected. In step two, the surveyor determines how the information/data will be used. For open-ended questions, the surveyor should examine participants’ answers to see if any differences or similarities exist. Step three involves the classification of common themes or ideas. The surveyor should create categories based on the common ideas or themes found. The categories should be clear and understandable. The categories created after examining the survey’s data output are called “emergent categories”. However, when the surveyor finds quotes that would fit specific categories these are called “preset categories”. The surveyor should also create categories that consist of a broad range of “ideas or concepts”. In some cases, information may need to be placed in more than one category and therefore, the surveyor would have to
cross-index. In the report, there should be an explanation for why certain categories were chosen (Powell & Renner, 2003, pp. 2-3, 5-7).

In step four, the surveyor identifies “….patterns and connections both within and between categories” (Powell & Renner, 2003, p. 5). After the information has been placed into categories, the surveyor must decide how the ideas or themes relate by examining the “….patterns and connections both within and between the categories”. While writing the report, several participant quotes should be used to help readers understand categories and the importance of a certain idea or theme. In addition, the surveyor needs to consider that certain themes or ideas may come across as more important than others while at other times some themes may conflict. The surveyor must also be aware of the number of times participants discuss certain themes and when two themes are mentioned together (Powell & Renner, 2003, pp. 5, 7-8). Step five involves the surveyor analyzing the information found and developing conclusions. The data needs to be distilled into an appropriate representation such as “….a diagram with boxes and arrows [which] [can] help show how all the pieces fit together”. “Creating such a model may reveal gaps in…[the] investigation and connections that remain unclear” (Powell & Renner, 2003, p. 5). Most importantly, in the final report the surveyor needs to acknowledge the audience he/she is writing too (Powell & Renner, 2003, p. 5).

In developing a final report, there should be a section explaining the reason certain quotes are being represented over others (Powell & Renner, 2003, p. 9). Second, one issue the surveyor should be aware of is even if the participants’ names are not revealed to ensure confidentiality, how the participants responded to questions may reveal their identity. Therefore, the surveyor should take into account the consequences from selecting various quotes and determine the importance of quotes and if the ones chosen are considered to represent “a balanced viewpoint”. Third, the surveyor should discuss the limitations of the study in the report. The limitations section should highlight the problems experienced in examining the data to inform readers why certain conclusions were made. Lastly, the surveyor should also consider “alternative explanations” or other ways the results could have been represented (Powell & Renner, 2003, p. 9).
2.3.1 Sample Survey Design Advantages and Disadvantages

There are several potential advantages and disadvantages associated with using a sample survey for this research project. As for advantages, surveys if structured appropriately can reduce costs and time spent on a research project. However, if the population targeted for the survey is located in many regions or places, the surveyor may need assistance, which could increase costs and time spent in completing the research project. Internet interactions reduce time spent traveling to other locations. However, some surveys can have a broader scope and therefore, would require more time and resources (Designing Evaluations, 1991, pp. 19, 23, 26). Despite this, the goal is to use resources efficiently and effectively. In addition, in terms of this research project, the survey questions should be specific and designed to obtain information needed to evaluate the program’s progress. The survey questions chosen will determine the type of information collected and therefore, all questions should represent the program accurately (Designing Evaluations, 1991, pp. 19-21, 27).

One disadvantage associated with using a sample survey is that answers may reflect certain biases of the respondents. Therefore, the data itself could turn out biased affecting the conclusions being made about a program’s overall progress and/or success. In addition, the return rate may be low requiring the surveyor to find ways to improve the return rate.

2.3.2 Sample Survey Design Internal and External Validity Issues

Creswell (2009) describes several internal validity issues that can arise when conducting research projects. One example of a possible internal validity issue is mortality. For example, some of the people targeted for the survey could drop out of the program resulting in a lower return rate (Creswell, 2009, p. 163). Bingham and Felbinger (2002) further highlight how the people who leave the program may have different qualities or valuable knowledge that could have been useful compared to the other people surveyed. The main issue with dropout rates is that the quality of the data collected may be affected. Second, historical events could affect the data collected, and therefore the examination of a program at a certain time might not be representative of the program for other years (Bingham & Felbinger, 2002, pp. 22, 24-25). In this case, one solution is to acknowledge how such events may have affected the data or how the data compares to other years when historical events did not occur (Creswell, 2009, p. 163). In addition, attention should be directed to how historical events could have affected the program’s participants (Bingham & Felbinger, 2002, p. 22).
A third issue is the data obtained may not be specific enough to answer this project’s research questions and the information itself may not be up to date. Fourth, the data collected may have to be examined in a variety of ways because the distribution of data may be different. The distribution of the data may be different because of the need to analyze the data on several scales or criteria. By examining the data in a variety of ways could also introduce new issues. Fifth, selection bias is also an issue because there may be difficulty in determining if those participating in the program are the people that the program is suppose to help (Bingham & Felbinger, 2002, p. 24). Furthermore, if participation is voluntary, the people who volunteer might not be the people that the program intends to target. Therefore, there may be difficulty in determining the ways the program affects their targeted stakeholder population. As for external validity issues, one example is “representativeness of the sample” and how generalizable the findings can be to another group of people working for a similar program (Bingham & Felbinger, 2002, pp. 24-25).

2.3.3 Summary of Research Project Design

An electronic survey was chosen as a data collection methodology for this project because the design was cost effective and could be completed in less than a year. This sample survey was also used to understand the Clean Cities program from a broad perspective. Therefore, this survey was not used to obtain an in depth understanding of the program or prove that a certain change or program strategy results in a specific outcome (Designing Evaluations, 1991, pp. 15-16). However, the sample survey was difficult to develop initially resulting in most time spent in understanding the program as well as designing questions that accurately represented the program as a whole, please see section 3.2 Preparation of Survey for more information.

The sample survey was used as opposed to interviewing members from a couple of coalitions because this method allowed more people to be targeted who were able to provide useful insight about the different types of coalitions and how they work. For example, not all coalitions will experience the same challenges and each will develop different goals based on the market environment of the community where their organization is located. This specific information would not been known unless a survey was designed to capture all of the coordinators perspectives working for various coalitions.

The purpose of the Clean Cities coordinator survey was to 1) examine if the coalitions were the same or different across several categories and 2) provide recommendations to the various coalitions of various ways their members could deliver results successfully. These recommendations describing the key characteristics of success can be useful for similar PPPs because they demonstrate what works best as well as different ways to establish organizational effectiveness.
2.4 Evaluation Literature Review

According to Barley and Cicchinelli (1999), performing an evaluation consists of examining various operations in purpose of 1) understanding how outcomes evolve and 2) identifying where improvements are needed (7, 15). Gareth and Hoffman (2004) further describe how performing an evaluation involves “[s]omeone…examining and weighing something against an explicit or implicit yardstick” (12). The types of yardsticks used are criteria and some examples include “economics” or “effectiveness”. Furthermore, the term program evaluation can be defined as the following: “[e]valuation is the systematic assessment of the operations and/or the outcomes of a program or policy, compared to a set of explicit or implicit standards, as a means of contributing to the improvement of the program or policy” (Gareth & Hoffman, 2004, p. 12). In this definition, a “systematic assessment” determines if evaluation methods were used appropriately. One way to ensure evaluation methods were used appropriately is by following formal steps throughout the evaluation process (Gareth & Hoffman, 2004, p. 12).

As a program is being evaluated, the focus should be on how “activities” and “outcomes” influence a program’s overall progress or success (Gareth & Hoffman, 2004, p. 13). The term “activities” in the evaluation definition refers to those involved in managing a program’s operations and the term “outcomes” refers to program member’s skill sets and experience. As the evaluation takes place, “[s]tandards for comparison” are used which are criteria used to compare how well the program is performing. These “standards for comparison” are described in either a program’s goals or objectives. The phrase “improvements of the program” refers to how the purpose of an evaluation should be to provide members with recommendations describing what works best as well as different ways to improve current operations. One way to determine how to improve a program is by identifying appropriate and supportive resources (Gareth & Hoffman, 2004, p. 13).

The type of evaluations performed for this research project is a formative, outcome, and process evaluation approach. A formative evaluation provides members with information about the different ways to improve a program (Gareth & Hoffman, 2004, p. 14). Therefore, a formative evaluation approach involves monitoring a program and providing recommendations on how to improve a program’s operations. The purpose in using an outcome evaluation approach is to understand the results of the organization and to determine if members are promoting positive or negative behaviors. Some examples of positive behavior are if the program adds knowledge to certain fields and if the program is decreasing the likeness of negative behaviors occurring. The main goal in using an outcome evaluation approach is to understand how the program affects its targeted stakeholder population. Lastly, the purpose of a process evaluation approach is to understand how the program is working and if a program’s operations or
activities are delivering appropriate results. This evaluation approach focuses on the services members distribute and how the program is being managed (Gareth & Hoffman, 2004, pp. 14, 16, 19, 65).

2.5 The Clean Cities Program

Because the Clean Cities program was used as a case study for this research project information was obtained and reviewed to understand 1) how the Clean Cities Program operates\(^1\) and 2) other evaluations or studies of the Clean Cities program. The individual Clean Cities coalitions were examined through the Clean Cities coordinator survey.

2.5.1 The Clean Cities Coordinators

The Clean Cities coordinator survey was sent to the coordinators because most coalitions have a position titled “coordinator”. The coordinator job position for coalitions has similar organizational responsibilities. However, the interests, goals, and organizational structure of the coalitions determine a coordinator’s major responsibilities. Some examples of the coordinators major responsibilities are: 1) recruiting new stakeholders, 2) organizing outreach/educational events, 3) writing reports, 4) creating coalition newsletters, and 5) serving as a consultant to government officials informing them of the alternative fuel vehicle technology market. In some cases, coordinators will also advocate for legislative issues or pending legislation when these activities are permitted by their organization.

The information below shows some respondents’ views of a coordinator’s major responsibilities and other information pertaining to the coalition coordinator position.

Respondents from Independent Coalitions

- A respondent from an independent coalition with a part-time externally supported coordinator, spends time “managing programs of the coalition,…seeking funding opportunities & applying for those opportunities”.
- A respondent from an independent coalition with a full time paid coordinator spends time “[administering] Clean Diesel grants for state and [EPA]”.
- A respondent from an independent coalition with a full time paid coordinator spends time managing “board communications”.

\(^1\)Please see section 3.2 Preparation of Survey for more information.
A respondent from an independent coalition with a full time paid coordinator spends time writing grants, managing the coalition website, serving as a “complaint adviser”, providing “technical expertise”, and overseeing various “Clean Cities national functions”.

Respondents from Subsidiary Coalitions:

- Two respondents from subsidiary coalitions with part time paid coordinators spend time serving as a “grant administrator”.
- A respondent from a subsidiary coalition with a part time paid coordinator spends time overseeing if their coalition is “[c]omplying with USDOE requirements”.
- A respondent from a subsidiary coalition with a part time paid coordinator spends time “…answering inquiries [and] grant writing”.
- A respondent from a subsidiary coalition with a part time paid coordinator spends time “developing projects [and] salvaging projects”.

The coalition coordinator informs both their coalition decision-making members and broader stakeholder group about their organization’s current activities. On the National Clean Cities main website, the coordinators can use the “coordinator toolbox” to identify those that should receive coalition information periodically as well as a resource to learn about how to enhance organizational operations. For new coordinators, information is provided on the website to educate members about training, outreach materials, and how the program works as a whole (“Coordinator Toolbox: Communicating within Clean Cities,”) (“Coordinator Toolbox- Training: Coordinator 101,”). While training, coordinators can enroll in online courses from Clean Cities University. Every year Clean Cities also has leadership retreats to help coordinators obtain the necessary skills to lead their coalitions effectively (“Coordinator Toolbox-Training: Clean Cities University,”) (“Coordinator Toolbox: Meetings and Events,”) (“Coordinator Toolbox: Developing Coalitions,”). According to the National Clean Cities website, most coordinators are responsible for managing all activities and events for their coalition and help the organization connect with various new stakeholders.
2.6 The Clean Cities Program

This section provides a background on the DOE’s Clean Cities PPP program, Clean Cities main goals, the various types of stakeholders coalition members work with periodically, and the coalitions overall focus as members are pursuing their program’s initiatives. This section also describes the type of strategies or approaches coalition members have used to achieve their main goals and the type of information the coalitions provide to the public.

Clean Cities’ prime mission is to improve U.S. energy and environmental practices by encouraging local stakeholders to become more actively involved in promoting alternative fuel vehicle technologies that can be used as a substitute for petroleum use. The five clean technologies Clean Cities encourages the public to explore are the following: 1) alternative fuels and vehicles, 2) hybrid electric vehicles, 3) idle-reduction technologies, 4) fuel economy measures, and 5) low-level fuel blends. As coalitions promote these technologies and attempt to reduce petroleum use across the country, Clean Cities members determine which technologies will successfully adapt to different regions market environment. While this process unfolds, the DOE also guides the coalitions on the approaches their members should take in promoting the usage of these technologies ("Mission and Background,"). The Clean Cities coalitions also benefit from using the DOE’s symbol for marketing purposes. Furthermore, by using the DOE’s symbol can ensure to their stakeholders the credibility of all the program’s internal and external activities. For example, the DOE’s logo may help sell ethanol fuel or natural gas in a certain region.

Clean Cities works with both state and local partners. The stakeholders who participate in the program’s activities are from businesses, community associations, transportation fleets, and government offices. On some occasions, Clean Cities has partnered at the national level where coalitions have collaborated with agencies, global organizations, and other infrastructure or fuel developers. While Clean Cities coalitions pursue these collaborative efforts, their members develop programs that analyze the market environment for alternative fuel vehicle technologies and take part in administering various educational opportunities ("Partnerships,").
Clean Cities coalitions are voluntary and composed of various public and private stakeholders. One of Clean Cities’ goals is to encourage members of the community to become more involved in program efforts. The following information highlights how coalition members can build and sustain a strong stakeholder base:

1) Clean Cities members should encourage 1) local community stakeholders to become more involved with coalition activities and 2) other coalition members to become involved with their organization’s “steering committee”. The purpose in using steering committees and attracting more participants is to help the coalition gain media attention for their current alternative fuel vehicle technology projects.

2) The coalition employees should be involved with creating and organizing new plans to aid their members in better delivering results.

3) The coalition employees should identify work groups and assign specific duties to these groups to ensure tasks can be completed effectively, and lastly

4) Clean Cities coalition members should try to collaborate with air quality employees. The purpose in having coalition members collaborate with these stakeholders is to increase their involvement in designing new policies that promote the use of Clean Cities five alternative fuel vehicle technologies ("Starting Coalitions.").

Another goal of the coalition members while pursuing energy and environmental initiatives is to educate citizens on the different ways to become more energy efficient. The coordinators and other coalition members also work on energy projects with state agencies, notify their stakeholders of grant opportunities, and continually revise their organizations’ goals. ("Coalition Activities," ) ("Starting Coalitions," ). The coordinators are also responsible for managing the organization’s initiatives’, “helping write legislation” and “hosting informative seminars” ("Coalition Activities," ).
2.7 Overview of the Clean Cities Program’s Organizational Operations

2.7.1 Clean Cities Coalitions Organizational Structure

Clean Cities coalition operations and strategies can be determined by 1) local governing bodies such as city councils, 2) local government public officials, 3) an independent consultant, and 4) a board of directors. However, in some cases, coalition members have the opportunity to develop and/or determine their own strategies (Respondent A, January 14, 2010).

However, a coalition’s organizational set up determines what type of strategies coalition members can explore (Respondent A, January 25, 2010). For example, if the coalition works with a consultant then their members are allowed to lobby legislators for additional funding or resources. However, one disadvantage coalition members may experience from working with a consultant is difficulty in obtaining needed resources. On the other hand, if a coalition is affiliated with a government entity then their members are not allowed to lobby. One advantage coalition members may experience from working closely with a city council or government entities is that coalitions may have access to various forms of support and/or resources such as contacting alternative fuel vehicle technology experts for assistance in promoting new market products (Respondent A, January 25, 2010).

Clean Cities coalitions can operate as a standalone organization or as an organization that is associated or connected to another partnership entity such as the American Lung Association or a government agency (Respondent B, January 15, 2010). The broad/overarching organizational structure of the coalitions influences the level of difficulty their members may experience in obtaining funding and the amount of freedom their members may have in developing new strategies. For the coalitions working closely with government, their members have less autonomy in making decisions about their organization’s activities and initiatives. However, sometimes the government entities that actively work with Clean Cities members will provide necessary funds and resources when needed for coalitions (Respondent B, January 15, 2010). According to Respondent B, for some coalitions, “the closer you are embedded within [a] government agency, [the] [more] your strategy comes in line with the agency or non-profit instead of your own”.

31
2.7.2 Metropolitan Planning Organizations

Clean Cities coalitions located in urban areas with a population of 50,000 or more are sometimes a part of metropolitan planning organizations (MPOs). (Respondent C, June 8, 2010). In the U.S., there are 100’s of MPOs and Clean Cities is a part of at least two. Coalitions that are a part of MPOs are not allowed to lobby and do not participate in a lot of “cold calling”. The term “cold calling” involves Clean Cities members making efforts to reach out to their coalition’s broader stakeholder group through hosting various outreach/educational events. For coalitions that are a part of MPOs, their members wear several different “hats”. For example, these members have to acknowledge both DOE’s and the MPOs requested assignments designed to enhance Clean Cities initiatives. Coalitions that work with MPOs are also able to obtain funding when needed. In some cases, stakeholders will seek financial help from their coalitions and ask members for more information about a specific alternative fuel vehicle technology that their company or organization is considering to purchase (Respondent C, June 8, 2010).

In certain parts of the country, state agencies actively work with the Clean Cities coalitions that are a part of MPOs (Respondent C, June 8, 2010). Clean Cities coalitions have used state agency’s divisions (e.g., R&D funding division) to explore grant opportunities. In addition, the employees working for certain state agency’s have very valuable technical skills and Clean Cities coalitions usually share new technologies with their employees while undergoing a process of trial and error to see which products have the most market potential (Respondent C, June 8, 2010).

2.7.3 Public Sector Collaborators, Coalition Members Organizational Role, Coalition Communication Strategies

Clean Cities coalitions work with public sector collaborators at all levels of government as their members encourage the expansion of the alternative fuel vehicle technology market (Respondent B, January 15, 2010). The term “public sector collaborators” refers to the public stakeholders or entities. However, each coalition may experience high or low collaboration success with the various public sector collaborators or government entities their members work with on projects and initiatives. For example, some coalitions have the most success when collaborating with both regional and local government entities (Respondent B, June 10, 2010).

Most coalition members are independent and do not directly work for their coalition. However, coalition members have similar interests and help one another in achieving their individual goals. For example, if a member is seeking more information about an alternative fuel vehicle technology, other members may
provide this information or recommend other places where this information is possibly available (Respondent C, June 8, 2010).

The Clean Cities coalitions have several communication strategies. For example, when disseminating coalition information, most coalitions use an e-mail list to inform members about their organization’s current events and/or overall progress. Most Clean Cities coalitions also have a website describing their activities or current agenda. Sometimes coalitions create newsletters to disseminate information (Respondent C, June 8, 2010). Coalition members also communicate and spread information through social medias such as twitter and facebook (Respondent B, June 10, 2010).

2.7.4 The Partnership Contract: The Responsibilities of the DOE and the Clean Cities Coalitions

Each year the DOE provides information or reports to the coalitions, describing their responsibilities, the program’s goals, and how these goals can or should be achieved. The DOE also makes periodic revisions to the information coalitions receive to ensure that the activities Clean Cities members are participating in are appropriate and compliment the program’s current missions (Respondent C, June 8, 2010).

All Clean Cities coalitions must follow the Clean Cities national goals. However, depending on their stakeholders’ interests and the alternative fuel vehicle technology market in their region, the coalitions may decide to focus on certain goals (Respondent C, June 8, 2010). Respondent B discusses the DOE’s national goals and describes how “…[w]e are able to challenge them [DOE] according to what we can do and how we can help in an area”. The DOE “creates a minimum threshold of activities for Clean Cities coalitions to do”. Therefore, the goal of the coalitions is to “[reach] a threshold”. This threshold is recorded by coalition members reporting, for example the growth rate of alternative fuels being used in their community (Respondent B, June 10, 2010).

Some goals of the coalitions are to reduce the number of diesel and gasoline fuel vehicles being used and to educate as many people as possible about the advantages associated with using alternative fuel vehicle technologies (Respondent B, June 10, 2010) (Respondent C, June 8, 2010). Another goal of some coalitions is finding new funding streams. According to Respondent B, “the more money we get the more valid we see our-self as an organization”. However, the overall goal of the Clean Cities program is to promote alternative fuel vehicle technologies and at the same time encourage the development of new policies that can help market for these technologies thrive (Respondent B, January 15, 2010).
2.7.5 *Clean Cities Coalitions Priority Areas*

Most coalitions focus on building a strong stakeholder base by working on projects that accommodate their stakeholders’ interests. For example, members try to “tailor…[current] projects around [their] stakeholder base” (Respondent B, June 10, 2010). Furthermore, coalitions only promote technologies or products that will survive in the local market. In some regions, their stakeholders may only be interested in certain technologies as opposed to others. Therefore, two questions members ask themselves while working with various community members are 1) what is available in this area and 2) what are their stakeholders alternative fuel vehicle technology interests and are these interests within their coalition’s current “realm of interest” (Respondent A, January 25, 2010).

In addition, coalition members take into account “the bottom line” while developing new initiatives. In other words, if coalition members can successfully “make an economic case” for pursuing certain initiatives then more stakeholders will want to participate in their organization’s activities (Respondent B, June 10, 2010).

As coalitions focus on recruiting new stakeholders, the organization’s “open process” is emphasized (Respondent C, June 8, 2010). Therefore, no one is prevented from going to meetings and coalition information is provided on websites to ensure their decision-making members and broader stakeholder group remain informed about their organization’s current projects/initiatives and overall progress. To attract stakeholders, some members will set up information booths in certain areas as a way to educate the public about the alternative fuel vehicle technology market. The goal of coalition members is to meet as many “players” as possible that are interested in their organization’s efforts (Respondent C, June 8, 2010). Some coalitions also host outreach/educational events such as “public car shows” allowing their members to make more connections with people who are interested in alternative fuel vehicle technologies (Respondent A, January 25, 2010).

In some cases, the location of the coalition determines how many and the type of stakeholders their members can collaborate with on projects and assignments. For example, if a coalition is located near a lot of federal offices or big companies, then their members will be able to access various resources as well as collaborate with a variety of different stakeholders (Respondent C, June 8, 2010).

One issue coalition members have experienced in attracting new stakeholders is that sometimes organizations may not have enough funding and will not be able to afford technologies such as an alternative fuel-efficient vehicle. Therefore, if organizations are unable to obtain enough funding to...
Measuring the Organizational Effectiveness of Public-private partnerships: A Case Study of the Department of Energy’s Clean Cities Public-private partnership program

purchase new technologies, their members will stop participating in coalition activities (Respondent C, June 8, 2010). To avoid these issues, coalitions should seek to work with stakeholders that have both the resources and time to collaborate on various initiatives (Respondent A, January 25, 2010).

2.8 Clean Cities Studies

Winebrake (1995) examined PPPs strategies by using the DOE’s Clean Cities PPP program as a case study. This author’s work examines the different ways the Clean Cities coalitions have encouraged the public to use clean technologies. The author further identifies specific organizational strategies that have supported or delayed the program’s efforts, the Clean Cities overarching objectives as a PPP, and some advantages associated with this partnership. There is also a discussion of the many phases program members have experienced in pursuing initiatives, for example the “build relationship phase” and “commitment phase” (Winebrake, 1995).

Winebrake also examines past energy and environment policies and highlights how helpful these policies have been in encouraging communities to adopt cleaner technologies. The author’s overall argument is Clean Cities coalitions can further a community’s goal of increasing the presence of alternative fuel vehicle technologies in the marketplace (Winebrake, 1995).

Dunn (2004) describes some successes of the Clean Cities Philadelphia coalition that involved encouraging the public to adopt alternative fuel vehicle technologies. “As of 2001, there was a total of 894 light duty Alternative Fuel Vehicles (AFV’s) recorded in the Philadelphia area”. Some other successes reported by Dunn include:

“Philadelphia International Airport has acquired a ground fleet of natural gas vehicles, A number of public events have displayed alternative fuel vehicles, The City has worked with local advocates for alternative fuel vehicles to encourage wider use of these vehicles,…. [and] Clean Fueled Fleets Rebate Program - provides grants to help offset up to 72% of the incremental cost of purchasing AFV’s….”. (Dunn, 2004, pp. 3-4).

The city of Philadelphia is also making several efforts to reduce their contribution to global warming by developing more local government programs that can alleviate the sources contributing to climate change. These authors conclude that all stakeholders, including elected officials, the private sector, and the public need to be proactive and work together to reduce GHG emissions (Dunn, 2004, p. 6).
3 Methodology

3.1 Description of Method and the Clean Cities Coordinator Survey

All of the Clean Cities coalitions are different in organizational structure, the restrictions their members have to adhere too, their goals, and the approaches or strategies their members use. In addition, people of all backgrounds manage these coalitions and periodically revise the organization’s goals and initiatives.

A survey was sent to 109 Clean Cities coordinators with questions pertaining to coalition characteristics and strategies. This survey was designed to gain insight on the organizational effectiveness of PPPs (To view a copy of the survey, please see 9.2 Appendix A2: Clean Cities Coordinator Survey). Some questions in this survey were about coalition characteristics, coalition’s collaboration success with various stakeholders, the coalition coordinator’s job responsibilities, and other organizational operations. These questions are examples of some categories that were used to determine differences between the coalitions. Furthermore, these questions targeted independent variables and obtained the following information:

1) the location of all the coalitions
2) the estimated population of the village/town/city where the coalitions are located
3) how long the coalitions have been in existence
4) how many and what type of entities or organizations are represented in each coalition
5) if the coalitions work with small businesses (500 employees or less) and/or large businesses (greater than 500 employees) and if so, the type of business or industry for each category
6) the coalitions collaboration success ratings for the various stakeholders their members work with on projects and initiatives
7) if the coalitions have committees as well as how many and what type of committees the coalitions use
8) the governing structure of the coalitions
9) the broad/overarching organizational structure of the coalitions
10) the coalition’s annual budget
11) the percentage of funding the coalitions receive from public and non-public sources
12) the percentage of funding coalitions allocate from their budgets to staff, grants for stakeholders, and public outreach activities
13) if the coalitions have paid employees and how many of their paid employees are full/part-time
“Measuring the Organizational Effectiveness of Public-private partnerships: A Case Study of the Department of Energy’s Clean Cities Public-private partnership program”

14) if the coalition coordinator is paid, unpaid or externally supported and if paid the coordinator’s job status, and

15) the major responsibilities of the coalition coordinator and the top three responsibilities the coordinator spends the most time doing

The questions in the survey also probed the methods and strategies coalition members use in carrying out their organization’s mission. Some examples of other survey questions that were not mentioned above obtained information about how coalition members help their stakeholders, coalition meetings, coalition goals and measures, and organizational challenges. Furthermore, these questions targeted dependent variables and obtained the following information:

1) how often coalitions hold meetings with their decision-making members
2) how coalition decision-making members communicate and share information. The respondents also had to rank the top three forms of communication and ways of sharing information
3) the member(s) responsible for disseminating information to coalition decision-making members
4) the coalitions annual goals, if the coalitions have been able to achieve those goals, and the measures’ members use to determine if their organization’s annual goals have been met
5) the methods coalitions use (replacement, reduction, elimination)
6) the strategies and outreach/educational approaches coalitions use. The respondents also had to rank the top three most effective strategies and outreach/educational approaches.
7) if coalitions advocate for legislative issues or pending legislation and at which level(s) of government
8) the type of techniques used by coalitions that advocate for legislation issues or pending legislation
9) coalition recruiting strategies, the level of difficulty coalitions have had in recruiting members who will be involved in setting goals and/or making decisions for their organization, and the type of recruiting difficulties coalition members have experienced
10) how often the coalitions meet with their broader stakeholder group
11) on average, how frequently the coalitions have contact with local, state, and federal government offices
12) if there are entities or organizations that the coalitions work with that have more influence over the coalition’s decisions than do others, and if so, then who
13) how the coalitions help their stakeholders. The respondents also had to rank the top three ways the coalitions help their stakeholders
14) what members find important in achieving goals and carrying out their coalition’s mission, and
15) the type of challenges the coalitions have experienced. The respondents also had to rank the top three challenges their members have experienced in carrying out coalition activities.

The questions in the Clean Cities coordinator survey have context, implementation, and outcome questions. Barley and Cicchinelli describe how context questions are used to determine what influences a program’s development. Outcome questions identify if the organizations goals or objectives have been met. In addition, these questions determine the impact of a program. Implementation questions are used to determine if member’s have completed all necessary tasks and successfully achieved an organization’s main goals (Barley & Cicchinelli, 1999, p. 20).

This research project 1) examined if independent and subsidiary coalitions were the same or different across several categories and 2) determined the key characteristics that should contribute to Clean Cities program success as a PPP. For example, the questions explore if for independent coalitions, conferences work better for certain population sizes. However, for subsidiary coalitions that are associated or connected to another partnership entity or participating organization such as the American Lung Association, outreach/educational efforts may work better for certain population sizes.

Another possible finding is whether the type of community where the coalition is located affects different activities the coalition may take part in. Furthermore, different regions have different priorities and needs. Therefore, coalitions will develop annual goals and pursue activities based on the needs of their community. Another potential finding is depending on the interests of the community and coalition stakeholders may determine if an independent or a subsidiary broad/overarching organizational structure is most appropriate for facilitating public and private collaborative interactions.
3.1.1 Data Collection Methods

The Clean Cities coordinator survey was distributed to the coalition coordinators on July 23, 2010 and August 10, 2010 using Clipboard, an Internet survey software system operated by Rochester Institute of Technology. For each time the survey was sent, the respondents had two weeks to complete the survey. According to the National Clean Cities website, there are currently 109 Clean Cities coalitions with coordinators. The Clean Cities coordinator survey sampled the entire population and participation in this survey was completely voluntarily.

The estimated amount of time that individuals would spend in completing this survey was twenty minutes. Before the participants began the survey, they were provided a cover letter containing informed consent information that included the following:

- The survey is anonymous
- The individual data will be collected and distilled into results/representation
- After this thesis is completed the individual data (surveys) will be destroyed
- The subject’s name will not be known or revealed
- For the subjects to not use any personal identifiers such as the name of organizations that their coalition currently works with on the survey
- How the results will only be shown to my primary master thesis adviser, Dr. James Winebrake (Dean of the College of Liberal Arts and Professor of Science, Technology and Society/Public Policy) and my thesis committee members, Dr. Franz Foltz (Associate Professor of Science, Technology and Society/Public Policy) and Professor M. Ann Howard (Senior Associate Dean and Professor of Science, Technology and Society/Public Policy)
- This master thesis including the results will be published

In addition, an institutional review board (IRB) form was filled out and submitted to Rochester Institute of Technology’s Office of Human Subjects Research for approval in conducting this quantitative method for this research project. Please see 9.1 Appendix A1: Survey Cover Letter for a complete version of the survey cover letter and/or informed consent information.
3.2 Preparation of Survey

3.2.1 Preliminary Review of Clean Cities Websites

A preliminary review of the Clean Cities program main website and the coalitions individual websites was conducted. In reviewing these websites, around 5-10 coalitions did not have a website link or their website link did not work. The coalitions individual websites were reviewed several times to identify different organization characteristics, strategies, and indicators of success. In reviewing these websites, attention was given to the language the coalitions used to define their funding categories. For example, these coalitions may allocate funding for public outreach. However, for some coalitions, this category could include programs and for other coalitions, this category could include different funding areas such as projects. Also examined was how each coalition describes their stakeholders or members. For example, sometimes coalitions refer to everyone (e.g. decision-making members and broader stakeholder group) as their members and in other cases coalitions refer to all these participants as their stakeholders. After reviewing these websites, only some coalitions were found to differentiate between decision-making member meetings and stakeholder meetings.

The Clean Cities websites were also reviewed to understand 1) the coalitions governing structure, 2) the coalitions broad/overarching organizational structure, 3) the type of stakeholders the coalitions most often work with on projects and initiatives, 4) the type of programs or projects the coalitions fund, and 5) the type of activities members host. These websites were reviewed to become familiar with the “language” used by coalitions for later use in the development of the survey.

3.2.2 Preliminary Phone Interviews

Preliminary phone interviews were conducted with three Clean Cities employees, respondent A, B, and C. In the year 2009, some Clean Cities employees were contacted individually by electronic mail and were asked if they would be willing to send and share their 2008 or most recent coalition annual report. With respect to these annual reports, Clean Cities coalitions have to submit their report yearly to National

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2 Respondent A works in a Clean Cities department providing information about alternative fuel vehicle technologies that are being promoted by the Clean Cities program. This department also focuses on administering various tasks designed to further along the program’s main initiatives. This respondent was interviewed.

3 Respondent B works for a coalition located in the Northeast and is responsible for developing coalition strategies and overseeing and/or managing coalition programs, activities and projects. This respondent was interviewed.

4 Respondent C works for a coalition located in the Northeast and is responsible for providing information about transportation projects for other organizations with similar interests. This respondent was interviewed.
Clean Cities describing their overall successes. In these reports, the coalitions describe some of the following:

1) how many and/or the type of outreach/educational events coalitions hosts
2) how many stakeholders coalitions work with on projects and assignments
3) how many alternative fuel vehicle technologies their stakeholders purchase
4) the number of grants coalition members help their stakeholders obtain
5) the amount of funding coalitions receive from other organizations
6) the type as well as quantity of alternative fuel stations of use in their community, and
7) the coalitions main accomplishments, (Respondent D, 2008, pp. 1-2)

The Clean Cities employees that responded and shared their annual reports are also those who were contacted later in the year 2010. These people were Respondent B and C. Respondent A contact information was provided after contacting Clean Cities headquarters. The preliminary phone interviews conducted provided information about how different parts of the Clean Cities program works and/or operates.

Of the preliminary phone interviews, two interviews were with Respondent A in January 2010. There were also phone interviews with two other Clean Cities employees. Respondent B was contacted once in January 2010 and June 2010. Respondent C was contacted once in June 2010. The phone interviews in January 2010 provided a broad overview of the program and the interviews in June 2010 provided specific information about Clean Cities organizational operations.

3.2.3 Review of Five Major “Themes”

In preparing the Clean Cities coordinator survey, the five major themes identified in the thesis literature review were examined that highlighted important organizational operations associated with PPPs. The five PPP themes examined were the following: 1) the different forms of PPPs, 2) the different ways these partnerships can be used, 3) partnership strategies and goals, 4) how to improve partnership operations through understanding current organizational challenges, and 5) the variety of ways to monitor partnership operations. These themes were used as a guide in developing appropriate questions for the Clean Cities coordinator survey.

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5Respondent D works for a coalition located in the Northeast and is responsible for providing information about alternative fuels and vehicles. This respondent was not interviewed.
Some questions in the Clean Cities coordinator survey that related to these five themes were the following: 1) the governing structure of the coalitions, 2) the broad/overarching organizational structure of the coalitions, 3) coalition methods, strategies, and outreach/educational efforts, 4) the strategies used by coalitions that advocate for legislation issues or pending legislation, 5) how frequently the coalitions have contact with local, state, and federal government entities, 4) the coalitions annual goals, whether the coalitions have been able to achieve those goals, and the measures’ members use to determine if their organization’s annual goals have been met, and 5) the type of challenges the coalitions have experienced in carrying out coalition activities.

Once the survey was developed, some questions were tested on both respondents B and C. Both respondents received a different set of questions and examples of some questions presented to them were the following: 1) “What are the technical skill sets of your coalition decision-making members and broader stakeholder group?”, 2) “At which levels of government has your coalition had the most success in terms of obtaining resources or getting projects, assignments, done?”, 3) “Do the public and private stakeholders that your members work with express different interests? If so, what are these interests? Also, has your organization experienced any tensions between public and private stakeholders in terms of the type of initiatives and/or strategies these groups would like the coalition to consider?”. These questions as well as others were tested on and/or presented to the respondents to confirm that the Clean Cities employees were able to understand what was being asked as well as to identify appropriate language to use in the survey. The respondents’ answers to these questions and several others provided additional information about the program and identified new questions and answer selections for specific question types in the survey. The Clean Cities coordinator survey questions were also revised throughout conducting these preliminary phone interviews.
3.2.4 **Coalition Characteristics and Indicators of Success**

The coalition characteristics identified from the preliminary phone interviews, preliminary review of the Clean Cities websites, and the review of the five major themes from the thesis literature review examined using statistical methods were the following:

1) coalition’s annual budget  
2) percentage of funding coalitions receive from public and non-public sources  
3) percentage of funding coalitions allocate from their budgets to public outreach activities, staff, and grants for stakeholders  
4) number of paid employees, and  
5) coalition’s membership size

Other coalition characteristics, strategies, and organizational operations that were identified from the preliminary phone interviews, preliminary review of Clean Cities websites, and the review of the five major themes from the thesis literature review examined using qualitative methods were the following:

1) the number of committees by type for the coalitions that use committees and the number of committees compared with the coalitions collaboration success ratings for various stakeholders  
2) comparison of the population sizes of the village/town/city where coalitions are located and Clean Cities strategies  
3) coalition methods (reduction, replacement, and elimination)  
4) the member(s) responsible for disseminating coalition information compared with how often coalition decision-making members hold meetings  
5) coalition recruiting strategies  
6) the difficulties coalition members have experienced in recruiting members who will be involved in setting goals and/or making decisions for their organization
Some indicators of partnership success identified from the preliminary phone interviews, preliminary review of websites and review of the five major themes, examined using qualitative methods were the Clean Cities coalitions annual goals, whether the coalitions have been able to achieve those goals, and the measures’ members use to determine if their organization’s annual goals have been met. Another indicator of success identified and examined using both quantitative and qualitative methods were the coalitions collaboration success with various stakeholders. The stakeholders identified were the following:

1) local, state, and federal government entities
2) schools (k-12)
3) post-secondary schools (e.g., universities, colleges, community colleges)
4) trade associations
5) non-profits
6) metropolitan planning organizations
7) regional planning organizations
8) small businesses (500 employees or less), and
9) large businesses (greater than 500 employees)

3.2.5 Clean Cities Coordinator Survey Pretest/Beta Testing Process

This survey was pre-tested on 17 different people to gain insight from others regarding the wording of questions and their answer selections. Before starting the survey, the people tested were provided with information about the program being used as a case study for this research project such as the Clean Cities program’s goals and mission as well as a description of the population targeted for this survey. The people completing the survey were asked to mention if 1) they did not understand what was being asked because of how the questions were worded, and 2) if they thought that the logic or the order that the questions were being asked in was inappropriate, and 3) if they thought a long answer question should instead be a fill in the blank question type.

Of the 17 people tested, 10 were tested in person and 7 were tested over the phone. The amount of time spent with each person discussing the survey questions varied. Some people spent 15 minutes completing the survey while others spent 45 minutes to an hour. The time that was spent discussing the survey with each person depended on the feedback provided and the clarification needed. Several changes were made to the wording of certain survey questions and their answer selections as a result of the test surveys.
Chapter 4

4 Results and Discussion

Different statistical methods were employed to examine if independent and subsidiary coalitions were the same or different across several categories. The categories examined using the parametric Two-Sample T-Test and nonparametric Mann-Whitney Test were coalition characteristics (Triola, 2001) (Conover, 1999). The coalition characteristics examined statistically using the two-sample t-test were the coalitions annual budgets and the percentage of funding coalitions receive from non-public sources. The coalition characteristic examined statistically using the Mann-Whitney test was the percentage of funding a coalition allocates from their budgets to staff.

Other categories examined using the Mann-Whitney test and nonparametric Chi-Square ($\chi^2$) Test for Differences in Probability were the coalitions collaboration success ratings for various stakeholders (Triola, 2001) (Conover, 1999). The stakeholders collaboration success ratings examined statistically using the Mann-Whitney test were 1) state and local government entities, 2) non-profits, and 3) large businesses which were identified as having greater than 500 employees. The stakeholders collaboration success ratings examined statistically using the $\chi^2$ test were federal government entities and schools (K-12).

Parametric tests make assumptions about the population distribution and use both the sample mean and sample standard deviation for each population to make predictions. To perform these tests, one requirement is that the data follows a normal distribution. Nonparametric tests do not make assumptions about the population distribution. Therefore, to perform these tests, there is no requirement that the data must follow a normal distribution. However, some nonparametric tests instead make inferences about population distributions. For example, the Mann-Whitney calculations are based on ranks and this test can investigate if two independent groups population distributions are different or not different. This method like other nonparametric tests does not use the sample mean and sample standard deviation for each population to make predictions.

The information in this section and sections 4.2.2 Statistical Results for Mann-Whitney Test: Coalition Characteristic Category Staff and 4.3 Statistical Tests Model Validation: Clean Cities Coalitions Collaboration Success Ratings for various Stakeholders, describing the statistical tests used in this analysis was knowledge obtained from performing the steps needed to make accurate calculations.
Some terms frequently used in this statistical analysis are defined below:

1) Population mean: The population mean refers to what the true mean is for each independent group. The population mean will never change because there is only one population mean. The sample mean might change depending on the sample size. However, one purpose of the two-sample t-test is to obtain a confidence interval that represents the difference between two groups sample means, and thus represents the difference between two groups population means.\(^6\)

2) Population: Certain statistical tests are used to make inferences or conclusions about a group or “population”.

3) Confidence Interval: A range that can represent the population mean, median, or difference. The accuracy of the confidence interval depends on the significance level used for a test. For example, 95% confidence is represented at a .05 significance level.

4) P-value: The probability of the null hypothesis being true or the probability of getting the same test statistic under the null hypothesis. If the p-value comes out to be .005 then there is only .005 chance that the null hypothesis is true providing enough evidence to support the alternative hypothesis.

5) Distribution: This term refers to how certain numbers have the same probability of occurring. Therefore, the test statistic is compared against the probability of the value occurring using specific distributions. Statistical tests will use different distributions, such the t-distribution, Mann-Whitney distribution, and the Chi-square distribution. For example, when examining a normal distribution, the probability that zero will show up is already pre-defined. The purpose of using certain statistical tests is to determine for example, the probability of having a difference or having a normal population.

6) Test statistic: This statistic represents the samples data in one number and is compared to a certain distribution.

\(^6\)The definition of the population mean is the same for the Mann-Whitney test with respect to population medians. For the $\chi^2$ test, the population proportion refers to what the true proportion for each category is within each independent group.
7) Normality: The process of examining normality involves comparing the values in the sample to the probability of the values occurring in a normal distribution. Therefore, the purpose of normality is to determine if the population follows a normal distribution. A normal distribution is a symmetric distribution or bell shaped.

8) Spread: This term refers to how much the data spreads out or the similarity of the numbers’ values. Spread is also represented by standard deviation and variance, which both measure how the numbers vary in a sample (1, 2, 3, 4) or (10, 50, 70, 100).

9) Shape: This term refers to the skewness of the data (right, left, or centered) which can be shown in box plots and histograms. Examining the shape of the data does not involve looking at standard deviation or variance.

4.1 Description of Survey Results

Of the 109 respondents that received the Clean Cities coordinator survey, 29 surveys were completed. The percentage of respondents that completed this survey from independent coalitions was 14 (50%) and the percentage of respondents from subsidiary coalitions was 14 (50%). More respondents completed this survey but because some respondents could not be identified as being from an independent or subsidiary coalition, their answers were not included in this analysis.

Table 1 and Table 2 show the number and percentage of respondents from independent and subsidiary coalitions that answered the survey questions representing the key attributes of the Clean Cities Program. Please see section 9.3 Appendix B1: Number and Percentage of Respondents from Independent and Subsidiary Coalitions that answered Survey Questions or Table 16, Table 17, Table 18, and Table 19 for more information about the number and percentage of respondents from independent and subsidiary coalitions that answered other survey questions used in this analysis.
Table 1: Two-Sample T-Test Categories

<table>
<thead>
<tr>
<th>Key Attributes of the Clean Cities Program</th>
<th>Number and Percentage of Respondents</th>
<th>Category Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Coalition Type</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q#44: Coalition’s annual budget</td>
<td>12 (52.17%)</td>
<td>$62,666</td>
</tr>
<tr>
<td></td>
<td>11 (47.82%)</td>
<td>$41,045</td>
</tr>
<tr>
<td>Q#45: Percentage of funding coalitions receive from non-public sources</td>
<td>12 (60%)</td>
<td>0.31</td>
</tr>
<tr>
<td></td>
<td>11 (40%)</td>
<td>0.15</td>
</tr>
</tbody>
</table>

Table 2: Mann-Whitney Test and $\chi^2$ Test Categories

<table>
<thead>
<tr>
<th>Key Attributes of the Clean Cities Program</th>
<th>Number and Percentage of Respondents</th>
<th>Category Median</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Coalition Type</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q#46: Percentage of funding a coalition allocates from their budgets to staff</td>
<td>9 (47.36%)</td>
<td>0.60</td>
</tr>
<tr>
<td></td>
<td>10 (52.36%)</td>
<td>0.87</td>
</tr>
<tr>
<td>Q#15: For each of the entities your coalition works with rate how successful collaboration has been using a scale of 1-4, 1 being the least successful and 4 being the most successful</td>
<td>14 (51.85%)</td>
<td>3</td>
</tr>
<tr>
<td>Large businesses</td>
<td>13 (48.14%)</td>
<td>3</td>
</tr>
<tr>
<td><strong>Nonprofits</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Independent</td>
<td>12 (52.17%)</td>
<td>3</td>
</tr>
<tr>
<td>Subsidiary</td>
<td>11 (47.82%)</td>
<td>3</td>
</tr>
</tbody>
</table>
4.2 Statistical Tests Model Validation: Clean Cities Coalition Characteristics

Both independent and subsidiary coalitions were compared statistically across three Clean Cities coalition characteristic categories which were 1) coalition’s annual budgets 2) percentage of funding coalitions receive from non-public sources, and 3) percentage of funding coalitions allocate from their budgets to staff. All statistical computations for this research project were made using the statistical software Minitab 15.

The statistical methods used to compare the coalitions across the coalition characteristic categories examined were the two-sample t-test and Mann-Whitney test. The purpose of the two-sample t-test is to compare two independent groups population means for quantitative categories. To perform this test, a normal distribution is required. This test uses the sample standard deviation and sample mean to predict the population means. Furthermore, this test was used to examine the differences between two groups sample means, thus representing the differences between the groups population means. Both the sizes of the sample and standard deviation will affect the test statistic and if a statistically significant difference exists. This is because as a sample size increases, statistical results should become more accurate.

<table>
<thead>
<tr>
<th></th>
<th>Independent</th>
<th>Subsidiary</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Schools (k-12)</strong></td>
<td>14 (53.84%)</td>
<td>12 (46.15%)</td>
</tr>
<tr>
<td><strong>Local government entities</strong></td>
<td>13 (48.14%)</td>
<td>14 (51.85%)</td>
</tr>
<tr>
<td><strong>State government entities</strong></td>
<td>13 (48.14%)</td>
<td>14 (51.85%)</td>
</tr>
<tr>
<td><strong>Federal government entities</strong></td>
<td>13 (52%)</td>
<td>12 (48%)</td>
</tr>
</tbody>
</table>

For the collaboration success rating categories schools (k-12) and federal government entities, there was no requirement to examine the median for the $\chi^2$ test. However, in reviewing this information, it is most appropriate to use the median number for comparison purposes.

The Mann Whitney test and $\chi^2$ test were also used to examine differences. The Mann-Whitney test examined differences between two groups population medians for quantitative categories and the $\chi^2$ test examined differences between two groups population probabilities or proportions for categorical variables.

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7For the collaboration success rating categories schools (k-12) and federal government entities, there was no requirement to examine the median for the $\chi^2$ test. However, in reviewing this information, it is most appropriate to use the median number for comparison purposes.
8The Mann Whitney test and $\chi^2$ test were also used to examine differences. The Mann-Whitney test examined differences between two groups population medians for quantitative categories and the $\chi^2$ test examined differences between two groups population probabilities or proportions for categorical variables.
“Measuring the Organizational Effectiveness of Public-private partnerships: A Case Study of the Department of Energy’s Clean Cities Public-private partnership program”

However, because the sample is getting larger does not mean there will be a significant difference. The two-sample t-test also examines spread represented by the standard deviation and variance. For this research, the estimated population means for both independent groups represent all independent and subsidiary Clean Cities coalitions (whole population for both groups). The current total number of Clean Cities coalitions is 109.9

The \emph{F-test} in some cases is required to perform the two-sample t-test. To perform the F-test, two independent groups are required to make a statistical comparison. The purpose of the F-test is to determine if the population variances for two independent groups are different or not different. For this test, the sample variance is used to predict the population variance for each group. The F-test examines how the values in the samples vary (e.g.; 1, 5, 100 and 2, 3, 5). For example, one group may have very big and small budgets while another group budgets could center on the same number such as $50,000.

The F-test is required when computing the two-sample t-test by hand. If after performing the F-test and the population variances are not different, a simpler calculation can be used to calculate the two-sample t-test by hand. However, when using Minitab 15 statistical software, it is not necessary to perform the F-test and click the assume equal variances function. This is because Minitab statistical software performs the original two-sample t-test complex equation. When assuming equal variances, an exact p-value will not be found. Therefore, if equal variances are not assumed the actual variances will be used instead of the pooled variances. The term pooled refers to the same variances. While using Minitab statistical software to perform the two-sample t-test, the variance for each group is used.

One assumption required in order to perform the two-sample t-test is both independent and subsidiary coalitions sample sizes for the coalition characteristic categories examined must have a normal population. The purpose of performing a normality test is determine if the samples shape is symmetric and follows a normal distribution. Therefore, normality was examined by looking at scatterplots of the data to see if linearity existed. Linearity is determined by examining if the data is symmetric and follows a best-fit line also known as a normality line. The normality test also involves determining if the samples p-value is greater than .01 (corresponding to 99% confidence level). The only categories assumed to have a normal population, after performing the normality tests were the coalition characteristic categories, coalition’s annual budgets and percentage of funding coalitions receive from non-public sources. Therefore, based on these normality calculations, there is not sufficient evidence to claim that

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9This interpretation is the same for other statistical tests used in this analysis such as the Mann-Whitney test estimating population medians and $\chi^2$ test estimating population probabilities or proportions.
independent and subsidiary coalitions sample populations for these coalition characteristic categories is not normal. Because Minitab statistical software cannot provide enough evidence to verify that the population is not normal, it is appropriate to assume the sample comes from a normal population. For the coalition characteristic categories that were assumed to have a normal population, two-sample t-test calculations were performed. Other assumptions met for this test were 1) the two groups are independent, 2) the observations were randomly selected\(^{10}\) and 3) the samples observations are at least ordinal.

When two independent groups’ samples for a quantitative category are assumed to have a non-normal population, the Mann-Whitney test is an appropriate method to use to make a statistical comparison. The purpose of the Mann-Whitney test is to compare two independent groups population medians for quantitative categories. This test makes inferences about distributions and determines whether the population distributions are different or not different. If the population distributions are different, then the population medians will be the different too. This test does not determine if there is a normal distribution but whether the samples distributions have the same shape. Therefore, to perform this test, a normal distribution is not required. This test does not estimate the exact confidence but gets as close as possible to the confidence level. The sizes of the sample affect the test statistic and if a significant difference exists.\(^ {11}\) Minitab 15 statistical software does not use any distribution assumptions involving the Z-test statistic calculation while computing the Mann-Whitney test. The Z-test statistic for the Mann-Whitney test is only used when examining large samples sizes because as samples get larger normality can be assumed. To perform the Z-test, a normal distribution is required. Therefore, the Z-test does not determine normality but assumes normality and uses normal distribution values. When using the Mann-Whitney test to examine small samples sizes, an appropriate test statistic to use is one that does not require a normal distribution. Another assumption met for this test is that the samples observations are at least nominal.\(^ {12}\)

To perform the Mann-Whitney test, one requirement is that the shape of the distribution for both samples must be the same. However, this method does not examine variance. When the shape of the data is being examined this refers to the symmetry of the data. However, the samples data does not have to be symmetric (centered) but can be left or right skewed. When the data is skewed, more values occur to the right or left of the median. Therefore, in using shape, this test does not look at the distribution but the shape of distribution. If the shape is different, the Mann-Whitney test may indicate that the groups appear

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\(^{10}\)Assumption 1 and 2 were met for both the Mann-Whitney test and \(\chi^2\) test.

\(^{11}\)The sizes of the sample affect the test statistic and if a significant difference exists for the \(\chi^2\) test too.

\(^{12}\)This assumption was met for the \(\chi^2\) test.
to be different even though they are the same. In other words, if the sample distributions have different shapes, the medians may never come out the same and if the samples distributions have the same shape, the medians may potentially come out different. The Mann-Whitney method of examining the samples shape is not as strong as determining normality.

For this statistical analysis, the samples shape was examined by looking at box plots of the data to determine if independent and subsidiary coalitions sample distributions for the coalition characteristic categories with non-normal populations had the same skew and spread/range. After examining the box plots of the data, the only coalition characteristic category for which both independent and subsidiary coalitions sample distributions had the same shape was the percentage of funding coalitions allocate from their budgets to staff.

The coalition characteristic categories that were assumed to have non-normal populations but could not be used for the Mann-Whitney test because both independent groups sample distributions for these categories did not have the same shape were the following: 1) the percentage of funding a coalition allocates from their budgets to public outreach activities, 2) the percentage of funding coalitions receive from public sources, and 3) membership size. For these categories, histograms of the data were not used to make shape comparisons because using these graphs to compare shape is only appropriate with large sample sizes, when the observation values range from zero to infinity, and/or when the observation values are whole numbers between a specific data range (e.g., 1, 2, 3, and 4).

In addition, of the coalition characteristics that were assumed to have a non-normal population, the number of paid employees could not be used for the Mann Whitney test because subsidiary coalitions sample size for this category did not have an appropriate number of observations/values. Therefore, because one group’s sample has few observations there is not enough evidence to claim that independent and subsidiary coalitions population medians for the number of paid employees is statistically different.

\[13\text{In section 4.3 Statistical Tests Model Validation: Clean Cities Coalitions Collaboration Success Ratings for various Stakeholders, the coalitions collaboration success ratings for various stakeholders was examined statistically using the Mann-Whitney test and } \chi^2 \text{ test. In the Clean Cities coordinator survey, there was a likert question asking respondents to rate their coalition’s collaboration success with various stakeholders on a scale of 1 to 4. Therefore, because likert scale questions’ observations are whole numbers between a specific data range, using histograms to make shape comparisons seemed appropriate.}\]
4.2.1 Statistical Results for Two-Sample T-Test: Coalition Characteristics

Both independent and subsidiary coalitions annual budgets and percentage of funding received from non-public sources were compared using the two-sample t-test. For the coalition characteristic category, the percentage of funding coalitions receive from non-public sources, the percentages were converted to decimal form in order to appropriately perform the two-sample t-test.

Table 3 shows the results after computing the two-sample t-test for the coalition characteristic categories examined.

Table 3: Two-Sample T-Test: Statistical Results for Coalition Characteristics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Alternative</th>
<th>Confidence Interval</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coalition’s Annual Budgets</td>
<td>≠</td>
<td>(-18905, 62148)</td>
<td>0.143</td>
</tr>
<tr>
<td>Percentage of Funding Coalitions Receive from Non-public sources</td>
<td>≠</td>
<td>(-0.232, 0.568)</td>
<td>0.184</td>
</tr>
</tbody>
</table>

The statistical interpretation of the results as shown in Table 3 is as follows:

- **Coalition’s Annual Budgets:** There is not sufficient evidence to claim that independent coalitions have a different annual budget population mean from subsidiary coalitions annual budget population mean. Therefore, the difference was determined to not be significant (p > .01 level). In addition, since zero is found in between the confidence intervals (-18905, 62148) at 99% confidence or .01 also proves the difference to not be statistically significant.

- **Percentage of Funding Coalitions Receive from Non-public sources:** There is not sufficient evidence to claim that independent coalitions population mean for percentage of funding received from non-public sources is different from subsidiary coalitions population mean for percentage of funding received from non-public sources. Therefore, the difference was determined to not be significant (p > .01 level). In addition, since zero is found in between the confidence intervals

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14The null hypothesis has been determined and therefore, the alternative represents not equal.
The confidence interval in this statistical analysis represents the difference between the two independent groups sample means. If more samples were taken, the difference between the sample means would fall between the confidence interval range 99% of the time. With 99% confidence, one can assume that the difference between the population means will also fall within this range.15

4.2.2 Statistical Results for Mann-Whitney Test: Coalition Characteristic Category Staff

The percentage of funding independent and subsidiary coalitions allocate from their budgets to staff was compared using the Mann Whitney test. For this coalition characteristic category, the percentages were converted to decimal form in order to appropriately perform the Mann Whitney test.

Table 4 shows the results after computing the Mann-Whitney test for the coalition characteristic category Staff.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Alternative</th>
<th>Confidence Interval</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff</td>
<td>≠</td>
<td>(-0.6000, 0.0999)</td>
<td>0.0592</td>
</tr>
</tbody>
</table>

According to the results shown in Table 4, there is not sufficient evidence to claim that independent coalitions population median for percentage of funding allocated to staff is different from subsidiary coalitions population median for percentage of funding allocated to staff. Therefore, the difference was determined to not be significant (p >.008 level). In addition, since zero is found between the confidence intervals (-0.6000, 0.0999) at 99.2% confidence or .008 also proves the difference to not be statistically significant.

After using the parametric two-sample t-test and nonparametric Mann-Whitney test to compare independent and subsidiary coalitions across several coalition characteristic categories, there was no statistically significant difference found. In addition, the two coalition characteristic categories 1) number of committees and 2) percentage of funding a coalition allocates from their budget to grants for

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15The interpretation of the confidence interval for the two-sample t-test is the same interpretation of the confidence interval for the Mann-Whitney test for this research project.
stakeholders were not examined statistically. These categories were not examined statistically because only respondents from independent coalitions were found to have and/or use committees as well as allocate funding from their budgets to grants for stakeholders. This information suggests that independent coalitions may have different funding goals than subsidiary coalitions. However, further analysis is needed to determine the similarities and differences between independent and subsidiary coalitions funding priorities.

As for the coalition characteristic categories that could not be examined statistically because certain assumptions or rules were not met in order to appropriately perform the two-sample t-test and Mann Whitney test, additional research is needed to determine other appropriate tests similar to these methods. The purpose in performing other tests is to determine if independent and subsidiary coalitions are the same or different across other categories not yet examined statistically.

4.3 Statistical Tests Model Validation: Clean Cities Coalitions Collaboration Success Ratings for various Stakeholders

Both independent and subsidiary coalitions collaboration success ratings for various stakeholders were compared using the Mann-Whitney test and \( \chi^2 \) test. The stakeholders collaboration success ratings examined using the Mann Whitney test were the following: 1) local government entities, 2) state government entities, 3) large businesses (greater than 500 employees) and 4) non-profits. The stakeholders collaboration success ratings examined using the \( \chi^2 \) test of homogeneity was the following: 1) federal government entities and 2) schools (k-12).

The purpose of the \( \chi^2 \) test is to compare two independent groups population probabilities or proportions with respect to categorical variables. This test does not examine if one distribution is different or not different from the other. The \( \chi^2 \) test instead makes inferences about population probabilities as opposed to making inferences about distributions. To perform this method, a normal distribution is not required. The \( \chi^2 \) test determines if the values have the same probability of happening by testing expected versus observed occurrences. Therefore, this test is not looking at spread but looking at observed versus expected values. The observed values represent what actually occurred and the expected values represent what is expected to happen given all proportions are the same. If both the observed and expected values are different, the test may indicate the probabilities/proportions are different. If observed and expected values are the same, the test may indicate the probabilities/proportions are the same.
For the $\chi^2$ test, only two stakeholders collaboration success ratings were examined because these were the only categories with expected values exceeding five. One rule or requirement of the $\chi^2$ test is to perform these calculations when examining large sample sizes. For this research, because some stakeholders collaboration success rating samples had few observations, their expected values could not exceed five.

In the Clean Cities coordinator survey, there was a likert (rating) scale question asking respondents to rate their coalition’s collaboration success with various stakeholders on a scale of 1 to 4. Both rating 1 (not successful) and rating 2 (somewhat successful) represent low levels of success and rating 3 (successful) and rating 4 (very successful) represent high levels of success.

The Mann-Whitney test is an example of an appropriate statistical method to use when examining statistical data that comes from likert scale questions. Another statistical test that can compare two independent groups across several quantitative categories is the two-sample t-test. However, to use the two-sample t-test, both groups sample observations have to range from zero to infinity. One problem is that likert scale questions cannot meet this assumption because these questions observations are whole numbers between a range (e.g., 1, 2, 3, and 4). Therefore, because likert scale data is between a specific data range, the two-sample t-test assumptions cannot be met. Another reason is using the mean and standard deviation to represent respondents’ opinions is statistically inappropriate because likert scale numbers refer to specific statements (Jamieson, 2004, pp. 1217-1218).

In order to use the Mann-Whitney test for all stakeholder collaboration success rating categories, both independent and subsidiary coalitions sample distributions must have the same shape. The samples shape was examined by looking at box plots of the data to determine if independent and subsidiary coalitions sample distributions for the stakeholder collaboration success rating categories had the same skew and spread/range. In addition, histograms of the data were also examined to make shape comparisons.

The stakeholder collaboration success rating categories that were assumed to have non-normal populations but could not be used for the Mann-Whitney test because both independent groups sample distributions for these categories did not have the shape were the following: 1) federal government entities, 2) schools (k-12), 3) post-secondary schools (universities, community colleges, and colleges), 4) trade associations, 5) regional planning organizations, 6) metropolitan planning organizations, and 7) small businesses (500 employees or less).
In addition, the coalitions collaboration success ratings for trade associations could not be compared using the Mann Whitney test because subsidiary coalitions sample size for this category did not have an appropriate number of observations/values. Therefore, because one group’s sample has few observations there is not enough evidence to claim that independent coalitions collaboration success ratings population median for trade associations is statistically different from subsidiary coalitions collaboration success ratings population median.

### 4.3.1 Statistical Results for Mann-Whitney Test: Coalitions Collaboration Success Ratings for various Stakeholders

Both independent and subsidiary coalitions collaboration success ratings for various stakeholders were compared using the Mann-Whitney test. The stakeholders collaboration success ratings examined were the following: 1) local government, 2) state government 3) large Businesses (greater than 500 employees), and 4) non-profits.

Table 5 shows the results after computing the Mann-Whitney test for the stakeholders collaboration success rating categories examined.

**Table 5: Mann-Whitney Test: Statistical Results for Coalitions Collaboration Success Ratings for various stakeholders**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Alternative</th>
<th>Confidence Interval</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Government entities</td>
<td>≠</td>
<td>(-1.000, 1.000)</td>
<td>0.0000</td>
</tr>
<tr>
<td>State Government entities</td>
<td>≠</td>
<td>(-1.000, 1.000)</td>
<td>0.7596</td>
</tr>
<tr>
<td>Large Businesses</td>
<td>≠</td>
<td>(-1.000, 1.000)</td>
<td>0.6087</td>
</tr>
<tr>
<td>Non-profits</td>
<td>≠</td>
<td>(-1.000, 1.000)</td>
<td>0.6356</td>
</tr>
</tbody>
</table>
The statistical interpretation of the results as shown in Table 5 is as follows:

- **Local Government entities**: There is not sufficient evidence to claim that the population median of independent coalitions collaboration success ratings for local government entities is different from the population median of subsidiary coalitions collaboration success ratings for local government entities. Therefore, the difference was determined to not be significant (p > .01 level). In addition, since zero is found between the confidence intervals (-1.000, 1.000) at 99.1% confidence or .009 also proves the difference to not be statistically significant.

- **State Government entities**: There is not sufficient evidence to claim that the population median of independent coalitions collaboration success ratings for state government entities is different from the population median of subsidiary coalitions collaboration success ratings for state government entities. Therefore, the difference was determined to not be significant (p > .01 level). In addition, since zero is found between the confidence intervals (-1.000, 1.000) at 99.1% confidence or .009 also proves the difference to not be statistically significant.

- **Large Businesses**: There is not sufficient evidence to claim that the population median of independent coalitions collaboration success ratings for large businesses is different from the population median of subsidiary coalitions collaboration success ratings for large businesses. Therefore, the difference was determined to not be significant (p > .01 level). In addition, since zero is found between the confidence intervals (-1.000, 1.000) at 99.1% confidence or .009 also proves the difference to not be statistically significant.

- **Non-profits**: There is not sufficient evidence to claim that the population median of independent coalitions collaboration success ratings for non-profits is different from the population median of subsidiary coalitions collaboration success ratings for non-profits. Therefore, the difference was determined to not be significant (p > .01 level). In addition, since zero is found between the
confidence intervals (-1.000, 1.000) at 99.1% confidence or .009 also proves the difference to not be statistically significant.

4.3.2 Statistical Results for $\chi^2$ Test: Coalitions Collaboration Success Ratings for various Stakeholders

Both independent and subsidiary coalitions collaboration success ratings for federal government entities and schools (k-12) were examined using the $\chi^2$ test. Table 6 shows the results after computing the $\chi^2$ test for coalitions collaboration success ratings for federal government.

Table 6: $\chi^2$ Test: Statistical Results for Coalitions Collaboration Success Ratings for Federal Government

<table>
<thead>
<tr>
<th></th>
<th>Independent</th>
<th>Subsidiary</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Level Success Ratings (1,2)</td>
<td>7 (6.24)</td>
<td>5 (5.76)</td>
<td>12</td>
</tr>
<tr>
<td>High Level Success Ratings (3,4)</td>
<td>6 (6.76)</td>
<td>7 (6.24)</td>
<td>13</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>12</td>
<td>25</td>
</tr>
</tbody>
</table>

According to the results as shown in Table 6, there is not sufficient evidence to claim that the probability of independent coalitions rating federal government entities high or low for collaboration success is different from the probability of subsidiary coalitions rating federal government entities high or low for collaboration success. Therefore, the difference was determined to be not statistically significant at 99% confidence (p>.01).

Table 7 shows results after computing the $\chi^2$ test for coalitions collaboration success ratings for schools (k-12)

Table 7: $\chi^2$ Test: Statistical Results for Coalitions Collaboration Success Ratings for Schools (K-12)

<table>
<thead>
<tr>
<th></th>
<th>Independent</th>
<th>Subsidiary</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Level Success Ratings (1,2)</td>
<td>5 (6.26)</td>
<td>8 (6.74)</td>
<td>13</td>
</tr>
<tr>
<td>High Level Success Ratings (3,4)</td>
<td>8 (6.74)</td>
<td>6 (7.26)</td>
<td>14</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>14</td>
<td>27</td>
</tr>
</tbody>
</table>
According to the results as shown in Table 7, there is not sufficient evidence to claim that the probability of independent coalitions rating schools (k-12) high or low for collaboration success is different from the probability of subsidiary coalitions rating schools (k-12) high or low for collaboration success. Therefore, the difference was determined to be not statistically significant at 99% confidence (p>.01).

After using the nonparametric Mann-Whitney test and nonparametric \( \chi^2 \) test to compare independent and subsidiary coalitions collaboration success ratings for various stakeholders, there was no statistically significant difference found. For the stakeholders collaboration success rating categories that could not be examined statistically because certain assumptions or rules were not met in order to appropriately perform the Mann Whitney test and \( \chi^2 \) test, additional research is needed to determine other appropriate tests similar to these methods. For example, other tests similar to the \( \chi^2 \) test that are appropriate for examining categories with small sample sizes could be used to determine if independent and subsidiary coalitions are the same or different across other categories not yet examined statistically.
4.4 Clean Cities Committees: Independent Coalitions

Figure 1 shows the number of committees by type for the Clean Cities coalitions that currently use committees. Exactly 8 (27.58%) of the 29 respondents that answered this survey question claimed that their coalition uses committees and 21 respondents (72.41%) claimed that their coalition did not use committees. In addition, of the eight respondents that claimed to have committees, seven were from independent coalitions\textsuperscript{16}. Therefore, none of the respondents from subsidiary coalitions claimed that their organization uses committees.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure1.png}
\caption{Number of Committees by Type for Coalitions with Committees}
\end{figure}

Of the 9 committee types found, the top three most commonly used are: 1) public awareness/outreach educational efforts committee, 2) stakeholder/development committee, and 3) specific technical

\textsuperscript{16}One of the respondent’s that claimed their coalition uses committees could not be identified as being from an independent or subsidiary coalition. Please see section 4.1 Description of Survey Results for more information about the number and percentage of respondents from independent and subsidiary coalitions that completed the Clean Cities coordinator survey.
committees. Clean Cities technical committees sometimes focus on certain technologies such as electric vehicles. These technical committees can also resemble a task force and focus on specific technical market areas such as compressed natural gas or propane.\textsuperscript{17}

\begin{figure}
\centering
\includegraphics[width=\textwidth]{chart.png}
\caption{Independent Coalitions- Comparison of the Number of Committees and Coalitions Collaboration Success Ratings for Schools (K-12), Post-secondary schools, and Non-profits.\textsuperscript{18}}
\end{figure}

\textsuperscript{17} As described in the Clean Cities coordinator survey data output, respondents referred to committees and task forces as accomplishing similar assignments.

\textsuperscript{18} In Figure 2, Figure 4, and Figure 6 the number of committees independent coalitions have from least to greatest is as follows: one, one, two, three to five, four, four, and six.
The trend lines as shown in Figure 3 were used to predict the general direction of the data for the categories examined. Trend lines test the correlation or relationship between two quantitative variables. The purpose of correlation is to show the response of one variable as another variable increases. Positive correction is when one variable increases the other variables also increases and negative correlation is when one variable increases the other variable decreases.

Figure 2 and Figure 3 show the number of committees independent coalitions use and their collaboration success ratings for schools (k-12), post-secondary schools, and non-profits. As shown in Figure 3, there appears to be a positive correlation between the collaboration success ratings for these stakeholders and the number of committees independent coalitions use.

In Figure 2, both coalition 6 with four committees and coalition 7 with six committees rated non-profits the highest for collaboration success. In addition, coalition six rated schools (k-12) and post-secondary schools the highest for collaboration success. As shown, coalition 3 with two committees, coalition 4 with three to five committees, and coalition 5 with four committees have higher collaboration success ratings for schools (k-12) and nonprofits than coalition 1 with one committee and coalition 2 with one committee.
collaboration success ratings for the same stakeholders. Therefore, this data suggests that the independent coalitions with more committees tend to have higher collaboration success ratings for certain stakeholders than the independent coalitions with fewer committees.

Figure 4: Independent Coalitions- Comparison of the Number of Committees and Coalitions Collaboration Success Ratings for Regional Planning Organizations (RPOs), Metropolitan Planning Organizations (MPOs), and Trade Associations.
Figure 5: Independent Coalitions- Comparison of the Number of Committees and Coalitions Collaboration Success Ratings for Regional Planning Organizations (RPOs), Metropolitan Planning Organizations (MPO’s), and Trade Associations.

Figure 4 and Figure 5 show the number of committees independent coalitions use and their collaboration success ratings for RPOs, MPOs, and trade associations. As shown in Figure 5, there appears to be a positive correlation between the collaboration success ratings for these stakeholders and the number of committees independent coalitions use. In Figure 4, both coalition 6 with four committees and coalition 7 with six committees rated these stakeholders the highest for collaboration success. In addition, coalition 5 with four committees has higher collaboration success ratings for these stakeholders than coalition 1 with one committee with collaboration success ratings for the same stakeholders. Therefore, this data suggests that the independent coalitions with more committees tend to have higher collaboration success ratings for certain stakeholders than the independent coalitions with fewer committees.
“Measuring the Organizational Effectiveness of Public-private partnerships: A Case Study of the Department of Energy’s Clean Cities Public-private partnership program”

Figure 6: Independent Coalitions- Comparison of the Number of Committees and Coalitions Collaboration Success Ratings for Local Government entities and Large Businesses.

Figure 7: Independent Coalitions- Comparison of the Number of Committees and Coalitions Collaboration Success Ratings for Local Government entities and Large Businesses.
Figure 6 and Figure 7 show the number of committees independent coalitions use and their collaboration success ratings for local government entities and large businesses. As shown in Figure 7, there appears to be a positive correlation between the collaboration success ratings for these stakeholders and the number of committees independent coalitions use.

In Figure 6, coalition 4 with three to five committees, coalition 6 with four committees, and coalition 7 with six committees have higher collaboration success ratings for local government entities and large businesses than coalition 1 with one committee and coalition 2 with one committee collaboration success ratings for the same stakeholders. Therefore, this data suggests that the independent coalitions with more committees tend to have higher collaboration success ratings for certain stakeholders than the independent coalitions with fewer committees.

The stakeholders collaboration success rating categories not represented in Figure 2, Figure 4, and Figure 6 were the following: 1) state and federal government entities and 2) small businesses. For state and federal government entities collaboration success ratings, the line was horizontal indicating that there was no correlation. For small businesses collaboration success ratings, uncertainty remains about whether there was a positive correlation between the two categories examined. Therefore, these categories were not shown because the stakeholders collaboration success ratings shown in Figure 2, Figure 4, and Figure 6 show a better correlation and relationship between the number of committees independent coalitions use and coalitions collaboration success ratings for these various stakeholders.

4.4.1 Comparison: Population Sizes of the Village/Town/City where Coalitions are Located and Clean Cities Strategies

The population size of the village/town/city where independent and subsidiary coalitions are located could influence the strategies used by Clean Cities members as they complete various projects and initiatives. In the Clean Cities coordinator survey, respondents selected the top three most effective strategies their members have used in carrying out their coalition’s mission as shown in Table 8 and Table 9. As shown in Table 8, for independent coalitions located in regions that have population sizes of 750,000 or greater, workshops and outreach/educational events for the public were most frequently chosen as the number one top strategies and coalition meetings were most frequently chosen as a third top strategy. However, for independent coalitions located in regions that have a population sizes of 460,000 or less, coalition meetings and outreach/educational events for the public were most frequently chosen as the number one top strategies and workshops were most frequently chosen as a third top strategy.
“Measuring the Organizational Effectiveness of Public-private partnerships: A Case Study of the Department of Energy’s Clean Cities Public-private partnership program”

Table 8: Independent Coalitions- Comparison of the Population Sizes of Village/Town/City where Coalitions are Located and Clean Cities Strategies

<table>
<thead>
<tr>
<th>Independent Coalitions Strategies</th>
<th>1&lt;sup&gt;st&lt;/sup&gt; Choice</th>
<th>2&lt;sup&gt;nd&lt;/sup&gt; Choice</th>
<th>3&lt;sup&gt;rd&lt;/sup&gt; Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population Sizes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>140,000</td>
<td>Coalition meetings</td>
<td>Building Partnerships</td>
<td>Outreach/educational events</td>
</tr>
<tr>
<td>150,000</td>
<td>Outreach/educational events</td>
<td>Building Partnerships</td>
<td>Workshops</td>
</tr>
<tr>
<td>400,000</td>
<td>Coalition meetings</td>
<td>Outreach/educational events</td>
<td>Workshops</td>
</tr>
<tr>
<td>400,000</td>
<td>Outreach/educational events</td>
<td>Coalition meetings</td>
<td>Workshops</td>
</tr>
<tr>
<td>450,000</td>
<td>Outreach/educational events</td>
<td>Coalition meetings</td>
<td>Promotion through earned, online, and paid media</td>
</tr>
<tr>
<td>460,000</td>
<td>Coalition meetings</td>
<td>Outreach/educational events</td>
<td>Building Partnerships</td>
</tr>
<tr>
<td>750,000</td>
<td>Workshops</td>
<td>Outreach/educational events</td>
<td>Coalition meetings</td>
</tr>
<tr>
<td>1 million</td>
<td>Outreach/educational events</td>
<td>Workshops</td>
<td>Coalition meetings</td>
</tr>
<tr>
<td>2.5 million</td>
<td>Outreach/educational events</td>
<td>Building partnerships</td>
<td>Coalition meetings</td>
</tr>
<tr>
<td>4 million</td>
<td>Outreach/educational events</td>
<td>Conferences</td>
<td>Outreach/educational events</td>
</tr>
<tr>
<td>4.5 million</td>
<td>Workshops</td>
<td>Coalition meetings</td>
<td>Outreach/educational events</td>
</tr>
<tr>
<td>5 million</td>
<td>Conferences</td>
<td>Workshops</td>
<td>Building Partnerships</td>
</tr>
<tr>
<td>9 million</td>
<td>Workshops</td>
<td>Conferences</td>
<td></td>
</tr>
</tbody>
</table>

Table 9: Subsidiary Coalitions- Comparison of the Population Sizes of the Village/Town/City where Coalitions are Located and Clean Cities Strategies

<table>
<thead>
<tr>
<th>Subsidiary Coalitions Strategies</th>
<th>1&lt;sup&gt;st&lt;/sup&gt; Choice</th>
<th>2&lt;sup&gt;nd&lt;/sup&gt; Choice</th>
<th>3&lt;sup&gt;rd&lt;/sup&gt; Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population Sizes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50,000</td>
<td>Outreach/educational events</td>
<td>Conferences</td>
<td>Recruiting Stakeholders</td>
</tr>
<tr>
<td>65,000</td>
<td>Workshops</td>
<td>Building Partnerships</td>
<td>Recruiting Stakeholders</td>
</tr>
<tr>
<td>300,000</td>
<td>Coalition meetings</td>
<td>Workshops</td>
<td>Conferences</td>
</tr>
<tr>
<td>620,000</td>
<td>Workshops</td>
<td>Conferences</td>
<td>Building Partnerships</td>
</tr>
<tr>
<td>780,000</td>
<td>Workshops</td>
<td>Outreach/educational events</td>
<td>Building Partnerships</td>
</tr>
<tr>
<td>800,000</td>
<td>Coalition meetings</td>
<td>Recruiting Stakeholders</td>
<td></td>
</tr>
<tr>
<td>1 million</td>
<td>Outreach/educational events</td>
<td>Workshops</td>
<td>Building Partnerships</td>
</tr>
<tr>
<td>1.2 million</td>
<td>Workshops</td>
<td>In person meetings</td>
<td>Building Partnerships</td>
</tr>
<tr>
<td>2.1 million</td>
<td>Workshops</td>
<td>Building Partnerships</td>
<td>Coalition Meetings</td>
</tr>
<tr>
<td>3 million</td>
<td>Workshops</td>
<td>Building Partnerships</td>
<td>Outreach/educational events</td>
</tr>
<tr>
<td>4 million</td>
<td>Building Partnerships</td>
<td>Coalition meetings</td>
<td>Conferences</td>
</tr>
<tr>
<td>5 million</td>
<td>Host Organizations grant program</td>
<td>Conferences</td>
<td>Workshops</td>
</tr>
<tr>
<td>6, 593, 587</td>
<td>Workshops</td>
<td>Coalition meetings</td>
<td></td>
</tr>
</tbody>
</table>

As shown in Table 9, for subsidiary coalitions located in regions of all population sizes, workshops were the most frequently chosen as the number one top strategy and building partnerships with industries was most frequently chosen as a third top strategy.
As described in sections 2.2.2 Types of Community Coalitions and 2.2.3 Stand-alone Coalitions both independent and subsidiary coalitions are designed to serve different interests and therefore, examining coalition strategies may highlight differences between their decision-making members’ approaches to completing tasks or initiatives. Please see section 6.1.2 Focus on the “Needs” of Stakeholders and the Community for more information about Clean Cities coalition strategies.

4.4.2 Coalition Methods

According to the Department of Energy’s Clean Cities program, “[t]he goal of Clean Cities is to expand and stimulate alternative fuel and advanced technology markets to reduce petroleum consumption by 2.5 billion gallons by 2020”. While trying to achieve this goal, Clean Cities coalitions can use the following methods:

- **Replacement**: Replacing petroleum used in the transportation sector with alternative fuels and low-level blends of non-petroleum replacement fuels.”
- **Reduction**: Reducing petroleum use by promoting energy efficiency in vehicles through fuel-efficient, advanced technology vehicles.”
- **Elimination**: Eliminating petroleum or other fuel use by promoting idle reduction, greater use of mass transit systems, and other congestion mitigation approaches.” (“Mission and Background,”)

Of the 14 respondents from independent coalitions that answered this question, 9 (64.28%) indicated that their members use all three methods. In addition, 3 of the 14 respondents from independent coalitions choose replacement and reduction, one respondent chose replacement and elimination, and one respondent chose replacement as methods their coalition uses. Of the 14 respondents from subsidiary coalitions that answered this survey question, 12 (85.71%) indicated that their members use all three methods. In addition, one respondent from a subsidiary coalition chose replacement and elimination and one respondent from a subsidiary coalition chose replacement and reduction as methods their coalition uses. As indicated in sections 2.6 The Clean Cities Program, 2.7 Overview of the Clean Cities Program’s Organizational Operations, and 3.1 Description of Method and the Clean Cities Coordinator Survey, the methods Clean Cities coalitions use is partly based on the market environment of the community where their organization is located.
As described in section 4.4.1 Comparison: Population Sizes of the Village/Town/City where Coalitions are located and Clean Cities Strategies, the strategies or methods coalitions use also reflect the interests of their stakeholders and the community. Please see section 6.1.2 Focus on the “Needs” of Stakeholders and the Community for more information about Clean Cities coalition methods.

4.4.3 Comparison: Member(s) Responsible for Disseminating Coalition Information and How often Coalition holds meetings with their Decision-making members

The member(s) working in both independent and subsidiary coalitions that are responsible for disseminating coalition information was compared with how often coalitions hold meetings with their decision-making members. The purpose of this comparison is to identify if those responsible for disseminating information also influences how often coalition decision-making members hold meetings. In Table 10 and Table 11, both coalition job positions executive director and coordinator are assumed to have the same responsibilities and are used interchangeably in this analysis and the discussion of the Clean Cities program.

Table 10: Independent Coalitions- Member(s) Responsible for Disseminating Information and How often Coalitions holds meetings with their Decision-making members

<table>
<thead>
<tr>
<th>Member(s) Responsible for Disseminating Coalition Information</th>
<th>How often Coalitions holds meetings with Decision-making members</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coordinator</td>
<td>Monthly</td>
</tr>
<tr>
<td>Executive Director</td>
<td>Monthly</td>
</tr>
<tr>
<td>Coordinator works with operating committee</td>
<td>Monthly</td>
</tr>
<tr>
<td>Coordinator</td>
<td>Monthly</td>
</tr>
<tr>
<td>Coordinator</td>
<td>Monthly</td>
</tr>
<tr>
<td>Executive Director</td>
<td>One meeting even months of the year by phone or email</td>
</tr>
<tr>
<td>Executive Director, Program Manager, Communications Coordinator, Finance Director (all part-time contracted)</td>
<td>Quarterly</td>
</tr>
<tr>
<td>Coordinator</td>
<td>Quarterly</td>
</tr>
<tr>
<td>Chairman/Coordinator</td>
<td>Quarterly</td>
</tr>
<tr>
<td>Coordinator</td>
<td>Quarterly</td>
</tr>
<tr>
<td>Executive Director</td>
<td>Quarterly</td>
</tr>
<tr>
<td>Coordinator</td>
<td>Twice a year</td>
</tr>
</tbody>
</table>
Table 10 shows the members working for independent coalitions that are responsible for disseminating information and how often these coalitions hold meetings with their decision-making members. The data suggests that of the respondents from independent coalitions, their members tend to meet quarterly and monthly. In addition, of the respondents from independent coalitions, the majority of members responsible for disseminating coalition information are the coordinators or executive directors.

Table 11: Subsidiary Coalitions- Member(s) Responsible for Disseminating Information and How Often Coalitions hold meetings with their Decision-making members

<table>
<thead>
<tr>
<th>Subsidiary Coalitions</th>
<th>Members Responsible for Disseminating Coalition Information</th>
<th>How often Coalitions hold meetings with Decision-making members</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coordinator works with state energy office director</td>
<td>Daily</td>
<td></td>
</tr>
<tr>
<td>Coordinator with help from DOER staff</td>
<td>Weekly</td>
<td></td>
</tr>
<tr>
<td>Coalition staff</td>
<td>Monthly</td>
<td></td>
</tr>
<tr>
<td>Coordinator</td>
<td>Monthly</td>
<td></td>
</tr>
<tr>
<td>Coordinator and coalition paid staff</td>
<td>Every two months</td>
<td></td>
</tr>
<tr>
<td>Coordinator</td>
<td>Monthly-Quarterly</td>
<td></td>
</tr>
<tr>
<td>Coordinator</td>
<td>Quarterly</td>
<td></td>
</tr>
<tr>
<td>Coordinator</td>
<td>Quarterly</td>
<td></td>
</tr>
<tr>
<td>Coordinator and intern</td>
<td>Quarterly</td>
<td></td>
</tr>
<tr>
<td>Coordinator</td>
<td>Quarterly</td>
<td></td>
</tr>
<tr>
<td>Communications Coordinator</td>
<td>Yearly</td>
<td></td>
</tr>
<tr>
<td>Coordinator</td>
<td>Yearly</td>
<td></td>
</tr>
</tbody>
</table>

Table 11 shows the members working for subsidiary coalitions that are responsible for disseminating information and how often these coalitions hold meetings with their decision-making members. The data suggests that of the respondents from subsidiary coalitions, their members tend to meet quarterly, monthly, or a combination of both. In addition, of the respondents from subsidiary coalitions, the majority of members responsible for disseminating coalition information are coordinators. This information also suggests that when staff members from another organization help the coordinator or when an office director assists the coordinator in disseminating coalition information, decision-making members meet more often such as daily or weekly.

For subsidiary coalitions, it seems that the members responsible for disseminating information are a part of another organization or have a position directly with the coalition. For independent coalitions, it seems that the members responsible for disseminating information have positions directly with the coalition as opposed to also working for other organizations. The differences between independent and subsidiary
coalitions for the categories examined depends on the type of strategies used by those that have a position directly with the coalition and by those from other organizations that are performing similar work for the same organization.

How often coalitions hold meetings with their decision-making members also determines the level of interaction members have while completing various projects and assignments. In addition, by identifying the type of members in charge of disseminating information determines those responsible for keeping the coalitions broader stakeholder group and decision-making members informed about the organization’s activities and progress. In addition, the members in charge of disseminating information also identifies those responsible for coordinating coalition meetings and facilitating ongoing collaborative interactions. However, depending on the organizational arrangement of independent and subsidiary coalitions determines the type of collaborative environment members facilitate. Please see sections 2.2.4 Independent and Dependent Organizational Processes and 6.1.3 Analyze the Collaborative Environment for more information about the different types of collaborative environments members can facilitate and the role of participating organization’s interests.

4.4.4 Coalition Recruiting Methods

Both independent and subsidiary coalition methods for recruiting new members that will be involved in settings goals and/or making decisions were compared. These new members can be a board member, a stakeholder, or other organizational member. The purpose of this comparison is to identify the decision-making members in charge of recruiting new members as well as to examine the differences and/or similarities between member recruiting strategies.
Table 12: Independent Coalitions- Recruiting Methods

<table>
<thead>
<tr>
<th>Independent Coalitions Recruiting Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondents answers from independent coalitions that have their board members, coalition members or staff, and/or stakeholders recruit new members</td>
</tr>
<tr>
<td>1) Open membership - dues based on size of organization/personal choice. Board members are nominated either by other board members, staff, or could be suggested from outside the organization. Board members should have an interest in petroleum reduction and good standing in the community. Annual meetings allow official opportunity for members to provide input on setting goals/making decisions.</td>
</tr>
<tr>
<td>2) Board member recommendation and vote</td>
</tr>
<tr>
<td>3) Board members recruit new board members. Staff and board make organizational decisions.</td>
</tr>
<tr>
<td>4) Board referral and Community recruitment</td>
</tr>
<tr>
<td>5) Stakeholders get to vote on Board of Directors. Board of Directors vote on Executive Committee.</td>
</tr>
<tr>
<td>6) Interest from member</td>
</tr>
<tr>
<td>Respondents answers from independent coalitions using outreach/educational efforts as a recruiting strategy</td>
</tr>
<tr>
<td>1) Outreach and promote it at events</td>
</tr>
<tr>
<td>2) Meet most at different events that I may be speaking at, invite to my meetings and hope they join</td>
</tr>
<tr>
<td>Respondents answers from independent coalitions using personal networking as a recruiting strategy</td>
</tr>
<tr>
<td>1) Personal networking</td>
</tr>
<tr>
<td>2) We generally target potential members and approach them on a personal basis</td>
</tr>
<tr>
<td>Respondents from independent coalitions highlighting additional recruiting strategies used by their organization</td>
</tr>
<tr>
<td>1) We do not seek new membership from the public. We have outside participation on a case-by-case basis</td>
</tr>
<tr>
<td>2) We do not have committees. We do not have lobby groups. We have unofficial groups such as CNG, Biodiesel, ethanol, and propane</td>
</tr>
</tbody>
</table>

Table 12 shows the recruiting methods used by independent coalition members. This data suggests that of the respondents from independent coalitions, their board members or organizational members are mainly responsible for recruiting new members. Other recruitment strategies commonly used by independent coalitions are hosting outreach/educational events and using personal networking strategies to attract new members.
Table 13: Subsidiary Coalitions- Recruiting Methods

<table>
<thead>
<tr>
<th>Subsidiary Coalitions Recruiting Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Respondents answers from subsidiary coalitions using outreach/educational efforts as a recruiting strategy</strong></td>
</tr>
<tr>
<td>1) We conduct targeted stakeholder outreach and site visits to individual businesses and other organizations that have an interest in alt fuels. We also have bi-monthly stakeholder meetings.</td>
</tr>
<tr>
<td>2) Stakeholder meetings, events, etc.</td>
</tr>
<tr>
<td>3) Try to identify individuals at outreach events</td>
</tr>
<tr>
<td>4) Coordinators call and request new members</td>
</tr>
<tr>
<td>5) By attending meetings, doing talks as well as networking are all ways that interested parties get involved</td>
</tr>
<tr>
<td>6) Workshops, conferences, meetings</td>
</tr>
<tr>
<td><strong>Respondents answers from subsidiary coalitions that have their board members and/or coordinator recruit new members</strong></td>
</tr>
<tr>
<td>1) We have a board of advisors</td>
</tr>
<tr>
<td>2) Current board members identify need area for board representation and potential candidates—discuss—make the ask—vote</td>
</tr>
<tr>
<td>3) The decision-making lies primarily with the Clean Cities Coordinator and her supervisors within the host organization. We have made attempts in the past to form an Advisory Panel to help guide the development of the Coalition, using emails and Coalition meetings as communication tools, but that fell through due to lack of time/interest.</td>
</tr>
<tr>
<td>4) Coordinators call and request new members</td>
</tr>
<tr>
<td><strong>A respondent from a subsidiary coalition highlighting additional recruiting strategies used by their organization</strong></td>
</tr>
<tr>
<td>5) Not applicable; coalition is housed in state energy office; energy office director sets goals/makes decisions</td>
</tr>
</tbody>
</table>

Table 13 shows the recruiting methods used by subsidiary coalition members. This data suggests that of the respondents from subsidiary coalitions, their members mainly recruit new members by hosting outreach/educational events. The outreach/educational events can consist of members organizing stakeholder meetings and public events. Other recruitment strategies commonly used by subsidiary coalitions include holding the board members and the coordinator responsible for making efforts to attract new members.

The differences between independent and subsidiary coalitions recruiting strategies depend on the strategies used by the various members in charge of facilitating coalition operations. The members responsible for managing organizational operations is based on the collaboration environment as well as
the involvement of other organization’s members. This data suggests that both independent and subsidiary coalitions have specific members responsible for recruiting new stakeholders. The members that are responsible for recruitment will exercise different strategies to facilitate the collaborative environment effectively. Please see section 6.1.3 Analyze the Collaborative Environment for a description of how coalition recruiting strategies influences the collaborative environment.

4.4.5 Coalition Recruiting Difficulties

The recruiting difficulties experienced by independent and subsidiary coalition members were compared. Table 14 shows some of the recruiting difficulties experienced by members working for independent coalitions. According to a respondent from an independent coalition, coalition policies and memberships costs are one reason their members have had continual trouble in recruiting new members. Therefore, this information suggests that independent and subsidiary coalitions could potentially have different organizational policies and membership costs affecting the type of recruiting strategies their members use.

Another respondent from an independent coalition highlights how one recruiting difficulty experienced is of local governments reducing their support for and involvement in coalition activities and of coalition members not being able to find attractive business investments/opportunities for their stakeholders. This information suggests that for coalitions receiving less support from government, their members will have a more difficult time recruiting government entities. This is a disadvantage to the coalition because their members may have a difficult time trying to attract and/or recruit the stakeholders that also work closely with government entities. Please see section 2.2.2 Types of Community Coalitions for more information about the differences between the amount of government support independent and subsidiary organizations receive as their members carry out various activities and initiatives. In addition, please see section 6.1.1 Examine the Broad/overarching Organizational Structure of Collaborative partners- The Case of Contracting Organizations for an explanation about why Clean Cities coalitions have possibly been experiencing recruiting difficulties as well as a description of potential solutions for these organizational issues. Also, section 6.1.4 Develop Formal Agreements highlights how these organizational issues can be avoided.
Measuring the Organizational Effectiveness of Public-private partnerships: 
A Case Study of the Department of Energy’s Clean Cities Public-private partnership program

Table 14: Independent Coalitions- Recruiting Difficulties Experienced

<table>
<thead>
<tr>
<th>Independent Coalitions</th>
<th>Difficulties experienced by coalitions in recruiting members who will be involved in setting goals and/or making decisions for their organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>1)</td>
<td>Some organizations believe that they should be a part of leadership as a function of their membership as opposed to having anything of value to add to the group.</td>
</tr>
<tr>
<td>2)</td>
<td>Interest in the Coalition's goals has fluctuated over the years relative to the market prices for fuel, and to the coalition's ability to effectively cover the region. Some board members have been involved so long that they have lost perspective on what role the Coalition should be playing regionally. In some situations, local governments have curbed their financial support of the Coalition, which has also resulted in lessening their involvement otherwise. Businesses have been hard to recruit/maintain as contributors without a clear cut return on investment. They don't necessarily see the value in our efforts to promote the fuels they use or the vehicles and fuels they sell.</td>
</tr>
<tr>
<td>3)</td>
<td>A variety of organizations that seem similar, cost of membership, internal policies of potential members.</td>
</tr>
</tbody>
</table>

Table 15: Subsidiary Coalitions- Recruiting Difficulties Experienced

<table>
<thead>
<tr>
<th>Subsidiary Coalitions</th>
<th>Difficulties experienced by coalitions in recruiting members who will be involved in setting goals and/or making decisions for their organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>1)</td>
<td>Organizational budgets are tight, sometimes it can be difficult for more bureaucratic orgs. to write checks (for stakeholder contributions).</td>
</tr>
<tr>
<td>2)</td>
<td>Time. We don't have any because we are always doing reporting for Clean Cities.</td>
</tr>
<tr>
<td>3)</td>
<td>People don't have time to commit. It's also challenging to define their role as we already answer to a separate board for our organization.</td>
</tr>
</tbody>
</table>

Table 15 shows some of the recruiting difficulties experienced by members working for subsidiary coalitions. One respondent highlighted how members are unable to spend time attracting and/or recruiting new members due to other coalition demands. In addition, both independent and subsidiary coalitions emphasize the need to better define their stakeholders role, which can help boost stakeholder commitment and contributions.
Chapter 5

5 Content Analysis of Survey Responses

Content analysis consisted of determining the key characteristics that should make the Clean Cities program successful by 1) examining the respondents’ answers from the Clean Cities coordinator survey in selected categories and 2) reviewing literature discussing the characteristics that make PPPs successful. The following categories from the survey were examined in identifying these key characteristics of success:19

1) what the coalition members find important in achieving their coalition’s mission
2) the different ways coalition members help their stakeholders
3) the challenges coalition members have experienced in carrying out activities and in recruiting members who will be involved in setting goals and/or making decisions for their organization, and
4) the coalitions annual goals, if the coalitions have been able to achieve those goals, and the measures’ members use to determine if their organization’s annual goals have been met

All the Clean Cities characteristics determined were then divided into two categories, which were internal and external organizational influences. The internal organizational influence category refers to characteristics that directly affect organizational operations. The external organizational influence category refers to characteristics that affect the collaborative environment that Clean Cities members are a part of while completing various projects and assignments. The main purpose in identifying these characteristics was to demonstrate how the Clean Cities program and other similar partnerships could help their members deliver results successfully by improving both their organizational operations and the collaborative environment their members facilitate.

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19These categories were selected because the respondents’ answers for these survey questions provided valuable information about what coalition members need most in running a successful organization.
5.1 Respondents Recommendations: The Key Characteristics that should make the Clean Cities Program Successful

The Clean Cities program relies on certain organizational characteristics to ensure their members are able to successfully pursue initiatives and achieve goals. This section examines the key organizational characteristics that should make the Clean Cities program successful. The key characteristics determined also identify the needs of the program. Therefore, also discussed are the different ways Clean Cities members can cater to these organizational needs to improve collaboration effectiveness.

According to Bourcier et al. (2006), some examples of important organizational characteristics are the following:

- “…decision making and the extent to which members have decision-making influence”
- “management expertise, including the work of paid staff”
- “communication patterns” (48s).

These characteristics as well as others that can be applied to the Clean Cities program were examined and discussed.

5.1.1 Internal Organizational Influences

1) Building a Strong Stakeholder Base

Building and sustaining a strong stakeholder base is an important supportive mechanism for facilitating Clean Cities collaborative interactions. The information below shows some respondents’ views of the importance in successfully recruiting stakeholders that will be involved in setting goals and/or making the decisions for their organization.

- According to a respondent from a subsidiary coalition, “[w]e are in the rebuilding process of developing a strong coalition core and identifying champions to help get the word out”.
- A respondent from a subsidiary coalition indicated that “[i]dentifying and engaging [c]hampions” is very important to the coalition in achieving goals and carrying out their organization’s mission.
- A respondent from an independent coalition highlights, “[t]he coordinator and executive director are working on getting the board more engaged in fundraising and growing the board. Two new Board Members have joined in the past 18 months”.

78
Furthermore, building a strong stakeholder base can help increase the number of funding streams an organization uses. A respondent from an independent coalition claims how one challenge is of the organization being able to “[maintain] stakeholder contributions (year after year)”.

Cawthra, Childst, Madge, and Wildridge (2004) highlight how as organizations are building their membership base, parties tend to act “in their self-interest” when deciding to collaborate with other entities or organizations (8). The information below shows some respondents’ views of the importance in appealing to their stakeholders’ demands and/or priorities.

- According to a respondent from a subsidiary coalition, as their members recruit new stakeholders one difficult task organizational members have experienced is being able to clearly explain to new potential members, the “what’s in for me piece”.
- A respondent from an independent coalition also discusses how one recruiting difficulty experienced by their members is finding ways to appeal to the “…involved stakeholders [who] have a direct financial interest in [our] projects”.

Improving Stakeholder Involvement and the Importance in having Effective Communication Methods

One way PPPs can improve stakeholder involvement in their activities is by keeping their decision-making members and broader stakeholder group informed about all organizational activities (Cawthra, Childst, Madge, & Wildridge, 2004, pp. 7-8). Therefore, in order to increase stakeholder involvement, partnership members must find ways to improve their communication methods. By improving an organization’s communication methods, can help members maintain their current relationships as well as foster new opportunities for members to develop new connections (Cawthra et al., 2004, pp. 7-8).
2) Creating a Supportive Collaborative Environment

One function of the Clean Cities program is to create an environment where both public and private stakeholders can learn from one another about alternative fuel vehicle technologies. Therefore, providing a supportive environment that can effectively facilitate public and private collaborative interactions is important in achieving partnership success. The information below shows respondents’ views of the different ways to create a supportive collaborative environment.

- A respondent from a subsidiary coalition highlights how one goal of their organization is to host more workshops.
- A respondent from a subsidiary coalition claims how one goal of their organization is to reach out to various stakeholders by hosting more outreach events.
- A respondent from an independent coalition discusses some goals of their organization are to host more outreach events and improve how their members communicate with their broader stakeholder group.

Participation Flexibility and Creating a Knowledge Producing Environment

Mizrahi & Rosenthal (2001) claim that some reasons stakeholders join coalitions similar to Clean Cities program is because participation in these organizations is flexible and stakeholders are able to obtain helpful information and expertise from various collaborators (70). Mizrahi and Rosenthal further highlight coalition member views of collaboration advantages:

“[First] what [in our coalition] works is the hammering out ideas that they [members] can’t do elsewhere. . .because they have a limited perspective. The coalition provides a place for a broader perspective and [offers a chance] to learn something in the process. Second [we allow for] the flexibility of their participation. They don’t have to do a lot if they don’t want to.” (Mizrahi & Rosenthal, 2001, p. 70).
3) **Clearly Defining Member Roles and Improving Organizational Policies**

Organizations need to clearly define the roles of both their decision-making members and broader stakeholder group as well as improve their “policy guidelines” (Cawthra et al., 2004, p. 8). The information below shows some respondents’ views of the importance in improving organizational policies and clearly defining the roles of their members. In highlighting this information, the respondents reflect on the difficulties their members have experienced in recruiting stakeholders who will be involved in setting goals and/or making decisions for their organization.

- A respondent from a subsidiary coalition discusses how one reason their members have experienced difficulty in recruiting stakeholders is because, “[p]eople don't have time to commit. It’s also challenging to define their role as we already answer to a separate board for our organization”.

- According to a respondent from an independent coalition, one difficulty their members have experienced in recruiting stakeholders is that “[s]ome organizations believe that they should be a part of leadership as a function of their membership as opposed to having anything of value to add to the group”.

Clean Cities coalitions also should develop policy guidelines that are in favor of both parties collaborative interests.

- According to a respondent from an independent coalition, their members have experienced difficulty in recruiting stakeholders because of “[a] variety of organizations that seem similar, cost of membership, [and] internal policies of potential members”.

**Clearly Defining and Balancing the Organizational Responsibilities of Collaborators**

One way to improve collaboration effectiveness is by having both parties participate in the organizational decision-making process and encouraging members to share partnership responsibilities (Cawthra et al., 2004, p. 7). Borchert and Hofmeister (2004) further highlight how there should be equal involvement of both parties in partnership operations. In addition, both parties’ responsibilities should be clearly defined to ensure collaborators each achieve win-win situations (Borchert & Hofmeister, 2004, pp. 219, 226).
4) Need for Staffed Coalitions

One issue the Clean Cities coalitions have experienced is with understaffed or un-staffed coalitions. An organization’s staff size has proven to be an important supportive mechanism that determines if members can deliver results effectively (Cawthra et al., 2004, p. 7). The information below shows some respondents’ views of the organizational difficulties’ members experienced from having understaffed coalitions.

- One organizational issue presented by a respondent from an independent coalition was having members be more responsible for more tasks due to understaffed coalitions. This respondent further discussed how the coalition coordinator has responsibility for managing both the “communications and activity development” department because their organization does not have enough resources to hire more staff.
- A respondent from an independent coalition highlights how one challenge their members have experienced is, “not [having] enough staff time due to fulltime employment elsewhere that pays wages”.
- A respondent from subsidiary coalition discussed how one challenge is having the “[c]oordinator working on a variety of programs instead of being focused on just Clean Cities”.

Therefore, one conclusion is having paid staff can help increase staff coverage for carrying out coalition responsibilities. More staff can divide organizational responsibilities and reduce the number of tasks required by each member.

Unstaffed Versus Staffed Coalitions

Thomas Wolff (2001) highlights that several concerns have been raised in having understaffed or unstaffed coalitions. Furthermore, “….numerous community coalitions are created to proceed without designated staff to support their efforts” (178). Research has shown that unstaffed coalitions may not be able to show the same results as staffed coalitions. One counterargument is that unstaffed coalitions, when managed correctly, can still be as successful as staffed coalitions. However, lack of staff can reduce members’ ability to effectively tackle a variety of different issues, pursue various assignments or projects, or use several mechanisms to engage their targeted stakeholder population. Therefore, to maintain staffed coalitions, organizations must have the ability to access many funding streams (Wolff, 2001, p. 178).
5) **Coalition Autonomy and the Need for a “Dedicated Funding Source”**

A challenge for some coalitions is the lack of autonomy in making decisions. A respondent from a subsidiary coalition discusses this issue and offers a solution: “Part of the reason the Coalition lacks autonomy is that the host organization pays the Coordinator staff salary; if the Coalition had its own dedicated funding source, this might change”.

6) **Improving the Internal Organizational Environment**

One way to achieve coalition effectiveness is improving member skill sets and making efforts to enhance an organization’s support mechanisms. The information below shows some respondents’ views of the importance in improving their organization’s internal environment.

- A respondent from a subsidiary coalition claims how one goal of their organization is “professional development”.
- A respondent from a subsidiary coalition discusses how one goal of their organization includes providing additional training for their employees.
- A respondent from a subsidiary coalition highlights how one goal of their organization is to “[b]etter organizational development (membership growth, formation of Advisory Panel, etc.)…. ”.
- A respondent from an independent coalition describes how their organization’s “[g]oals generally include membership/fund growth and diversification, strengthening of existing programs…. ”

**Member Capacity Building**

Allen, Berkowitz, Foster-Fisherman, Jacobson, & Lounsbury (2001) highlight how promoting “member capacity building” can improve “coalition effectiveness” (250). One way organizations can improve their members skill sets is by creating technical training programs that support developing employee “core competencies” (Allen, Berkowitz, Foster-Fisherman, Jacobson, & Lounsbury, 2001, pp. 249-250). Allen et al. further highlights how,

“The recruitment of coalition members is perhaps one of the most critical components of coalition formation. Because coalitions rely on the capacity of their members, coalitions need to ensure that their membership base is reflective of the needed member capacity and of the diversity within its community. Attention to these needs during the recruitment process can significantly foster coalition development and success” (Allen et al., 2001, p. 250).
Therefore, promoting “member capacity building” can diversify the organization and allow stakeholders to work with people that have experience in many fields. In addition, as organizations promote “member capacity building” “collaborative capacity” increases (Allen et al., 2001, pp. 249-250).

7) Providing effective services, appropriate resources, and opportunities for coalition stakeholders

The Clean Cities program is a community-based program and one way to determine coalition success is identifying the services, resources, and opportunities members provide to their stakeholders. As coalitions receive contributions from a variety of different stakeholders, these funds provide support to their organization’s initiatives, projects, and services. The information below shows some respondents’ views of the different ways their members have helped their stakeholders.

- A respondent from a subsidiary coalition discusses how coalition members assist stakeholders in obtaining technical literature regarding alternative fuel vehicle technologies.
- A respondent from a subsidiary coalition highlights how coalition members administer “workgroups” for their stakeholders that are investigating specific research areas.
- A respondent from a subsidiary coalition claims coalition members manage and/or host workshops to help encourage the public to adopt alternative fuel vehicle technologies
- A respondent from an independent coalition discusses how coalition members inform stakeholders of coalition events, upcoming opportunities, and current energy and environmental issues.
- A last respondent from an independent coalition highlights how coalition members focus on “[facilitating] mutually beneficial partnerships” for their stakeholders.
5.1.2 External Organizational Influences

1) Establishing New Connections

Coalition members need to facilitate a supportive collaborative environment that encourages their decision-making members and broader stakeholder group to build “informal relationships and communication links” (Cawthra et al., 2004, p. 7). The information below shows some respondents’ views of the importance in helping their stakeholders establish new connections.

- According to a respondent from a subsidiary coalition, one of the more common ways their members help their stakeholders is by “[connecting] people working on similar/related activities”.
- A respondent from an independent coalition highlights how their members help their stakeholders by “[providing] forum for stakeholders to learn from each others’ experiences”.

Improving Collaborative Relationships

According to Thomas Wolff (2001), “[t]he most successful community coalitions take the time to build relationships, mobilize the community, and personally visit the key local players” (176). Therefore, coalition members need to build a strong relationship with stakeholders that can provide valuable support to their organization’s projects and initiatives (Wolff, 2001, p. 176). In addition, members should also try to find “new players” directly from the community or from different areas to assist in coalition efforts. These new players will be responsible for administering meetings and overseeing the work of coalition tasks forces (Wolff, 2001, p. 181).
2) **Working Successfully with Other Organizations or Coalitions**

The ability of coalitions to work successfully with other organizations and coalitions with similar initiatives has proven to be a challenge as well as an important supportive mechanism to members in effectively carrying out activities. Therefore, to improve collaborative interactions, organizations should create a “supportive environment” that allows both parties to obtain “linkages with other organizations” (Bourcier et al., 2006, p. 48s). The information below shows some respondents’ views of their experiences collaborating with other organizations.

- A respondent from an independent coalition highlights how, “collaborating with complimentary initiatives in our area” is important for members in achieving their organization’s own stated goals.
- A respondent from an independent coalition highlights how one goal of their organization is to “[m]aintain or increase joint efforts with [other] participants and coalitions”.
- A respondent from a subsidiary coalition discusses how one challenge their members have experienced is “difficulty [working] with other Clean Cities coalitions”. Therefore, one way to improve the collaborative environment is pursuing initiatives or opportunities that reflect both parties’ interests.

3) **Need for New Policy Incentives**

The purpose of the Clean Cities program is to encourage communities to use alternative fuel vehicle technologies that can help reduce petroleum use. Therefore, the development of policy incentives that encourage the public to use alternative fuel vehicle technologies is important to coalition members in effectively carrying out their organization’s mission. The information below shows some respondents’ views reflecting the importance of establishing new policy incentives for alternative fuel vehicle technologies.

- A respondent from a subsidiary coalition indicated that their members have had difficulty pursuing their initiatives due to lack of new mandates and the presence of “cheap petroleum”. Therefore, government needs to create policies that will support Clean Cities efforts and allow members to pursue initiatives successfully.
- A respondent from a subsidiary coalition highlights how one goal of their organization is to “….create better, preferential incentives for infrastructure/[alternative] fuel development….”
A respondent from an independent coalition observed that its members have not been as successful because government incentives are not renewed and federal decision-making does not involve creating policies favoring Clean Cities efforts.

A respondent from an independent coalition emphasized how renewing federal incentives and finding ways to enforce these standards will provide significant support to their members in achieving Clean Cities goals.
5.2 Clean Cities Coalition Goal Measures

Of the respondents that answered the survey question asking if their coalition has annual goals, 24 (82.75%) claimed their organization had annual goals while 5 (17.24%) claimed that their organization did not have annual goals. The number of respondents from both independent and subsidiary coalitions that had annual goals was 11 (40%). However, 3 (11%) respondents from subsidiary coalitions and 2 (.07%) respondents from independent coalitions claimed that their organization had no annual goals.

Based on these responses, it can be inferred that most of the individual Clean Cities coalitions have specific annual goals in addition to the Clean Cities National goals. One reason some coalitions have specific goals is because of the marketing environment where their organization is located. Some examples of coalition goals are increasing their stakeholder base, increasing the number of alternative fuel vehicles and stations in use where their organization is located, and promoting new policy incentives to encourage greater use of alternative fuel vehicle technologies.

Another finding is that most Clean Cities coalitions use the same measures to determine how well their members have met their coalition’s annual goals and overall organizational performance. Therefore, these measures were examined to identify other ways the coalitions are fulfilling their program’s mission as well as other characteristics that help make the Clean Cities program successful.

1) Coalition members examine the results from their individual coalition annual survey and the results from the DOE’s annual survey (e.g., DOE Annual Petroleum Reduction Survey) to determine individual performance and their program’s overall effectiveness. These surveys count the number of:
   a) alternative fuel vehicles in use where their coalition is located,
   b) alternative fuel stations in development in their community (also known as “alternative fueling capability”),
   c) number of stakeholders,
   d) coalition activities and/or events (e.g., workshops) as well as the attendance rate for each coalition activity or event.

Other measures coalitions use, but are not required for documentation in the survey, is the number of 1) board members working for the coalition, 2) “media and advocacy activities completed”, 3) stakeholder meetings, and 4) trainings.

- A respondent from a subsidiary coalition highlighted how their members assess their annual reports and make changes to their strategic planning as needed to support their members collaborative efforts.
• Another respondent from a subsidiary coalition reflects on their coalition measures and claims that “[n]umber goals are set and based on the numbers [and] [then] at the end of the year it is determined if the goal has been met.”

2) The coalition members also review other informal information to determine their coalition’s progress. For example, informal information can involve members reviewing the coalitions “5-year plan” as well as members discussing at meetings the yearly goals that have been achieved.

The measures organization’s use to determine progress is a key indicator of the type of support coalitions need to manage collaborative interactions. These measures are also an indicator of the benchmarks coalition’s use to determine overall progress. Therefore, some of these indicators of success can also be used to represent other key characteristics needed to make Clean Cities collaborative efforts successful. In addition, examining respondents’ views of the measures their coalition uses identifies various ways members have tried to make organizational improvements. The respondents’ views also highlight the internal and external influences shaping the success of their organization.
Chapter 6

6  Recommendations for Independent and Subsidiary Organizational Structures and Implications

6.1 Independent and Subsidiary Organization Recommendations

Below is a list of recommendations for independent and subsidiary organizations. These recommendations are discussed in the context of the Clean Cities program. In addition, the content analysis findings found in section Results and Discussion were discussed to demonstrate how the recommendations from the literature could be applied to the Clean Cities program.

6.1.1 Examine the Broad/overarching Organizational Structure of Collaborative partners- The Case of Contracting Organizations

Independent or stand-alone structures are most appropriate when organizations or coalitions are working with contracting entities with standalone needs (Bickers, 2007, p. 186). This is because coalition meetings can inform contracting entities about the quality of their agents work as well as the issues their agents’ have experienced in delivering services. In addition, coalition members can identify the best practices for their organizations that are involved in contracted service delivery (Bickers, 2007, p. 186). Therefore, coalitions should acknowledge the broad/overarching organizational structure of their contracted agents in order to ensure their organization has the ability to address their stakeholders needs effectively.

In section 4.4.6 Coalition Recruiting Difficulties, the recruiting difficulties experienced by independent and subsidiary coalitions were compared. Table 14 shows the recruiting difficulties experienced by respondents from independent coalitions. Of these respondents, one highlights the difficulties their members have experienced in recruiting certain stakeholders. In reflection of these findings, research suggests that independent and subsidiary coalitions may receive different amounts of support from certain stakeholders possibly because of their organization’s broad/overarching structure. Therefore, one conclusion is coalitions need to examine both the broad/overarching structure of their coalition and their collaborative partners to determine if their organization has the necessary support and resources to address their stakeholders’ needs effectively.
6.1.2 Focus on the “Needs” of Stakeholders and the Community

Some organizations determine whether to use an independent or subsidiary organizational structure based on the “needs” of their stakeholders and the community (Bickers, 2007, pp. 169-170). For example, the community where an organization resides may decide to focus on improving service delivery or on solving community issues as well as becoming more involved with development projects that will cater to their areas needs. However, different organizations are designed to address specific needs. For example, independent organizations focus on development projects and solving community issues and function best when working with stakeholders that have “standalone” needs. In addition, independent structures should be used when organizations are able to obtain the necessary resources to address their stakeholders’ needs effectively. Subsidiary organizations instead focus on improving service delivery and receive frequent external support from government to aid their members in effectively carrying out activities (Bickers, 2007, pp. 169-170) (White, 1986, pp. 239, 241).

The members that manage Clean Cities coalitions are also from other organizations that assist a variety of other stakeholders with specific needs. Therefore, the needs of both those involved in running the coalitions as well as their collaborative partners’ influence the organization’s structure and their stakeholder target population too.

In section 4.4.2 Comparison: Population Sizes of the Village/Town/City where Coalitions are Located and Clean Cities Strategies, the population size of the village/town/city where independent and subsidiary coalitions are located was compared with the strategies Clean Cities members use to complete various projects and initiatives. Table 8 and Table 9 suggest that both independent and subsidiary coalitions use different strategies for various population sizes. However, another assumption is that their collaborators interests influence the strategies chosen by coalitions. In addition, in section 4.4.3 Coalition Methods, both independent and subsidiary coalition methods were compared. As indicated, the methods Clean Cities coalitions use is partly based on the market environment of the community where their organization is located. The methods coalitions use also reflect the interests of their stakeholders and the community (Bickers, 2007, pp. 169-170) (White, 1986, pp. 239, 241).

In order for coalitions to achieve collaboration effectiveness, their members should determine the type of stakeholder interests their organization has the necessary resources and support to address. In other words, independent and subsidiary coalitions offer different support as described in section 6.1.3 Analyze the Collaborative Environment and therefore, their members may work better with certain stakeholders. Clean Cities members can determine which entities are better collaborative partnerships

6.1.3 Analyze the Collaborative Environment

The decision to use independent or subsidiary organizational structure is dependent on the type of collaborative environment needed for all parties to carry out required tasks effectively. Furthermore, if an initiative or project requires a diverse workgroup and low-level interaction among collaborative parties, independent or differentiated organizational processes are necessary. On the other hand, if an initiative or project requires frequent oversight and high-level interaction among parties, integrated or dependent processes are necessary. In addition, integrated or dependent collaborative processes are most appropriate when organizations have similar cultures (Smutny & Takahashi, 2001, p. 148).

The Clean Cities coalitions each develop initiatives or goals based on the market environment of the community where their organization is located. Therefore, independent and/or dependent processes may be appropriate depending on the similarity of both collaborative parties’ interests and goals (Smutny & Takahashi, 2001, p. 148).

In section 4.4.3 Comparison: Member(s) Responsible for Disseminating Coalition Information and How often Coalition holds meetings with their Decision-making members, the members working in both independent and subsidiary coalitions responsible for disseminating coalition information was compared with how often coalitions hold meetings with their decision-making members. How often coalitions hold meetings with their decision-making members can also determine the level of interaction members have while completing various projects and assignments. In addition, the members that are in charge of disseminating information is an indication of the members responsible for coordinating coalition meetings and facilitating collaborative interactions.

Both Table 10 and Table 11 suggest that depending on how often coalitions hold meetings with their decision-making members determines the type of members responsible for disseminating information. In section 4.4.4 Coalition Recruiting Methods, both independent and subsidiary coalitions recruiting methods were compared. Both Table 12 and Table 13 suggest that differences between independent and subsidiary coalitions recruiting strategies depend on the strategies used by the various members in charge of managing coalition operations. In addition, the involvement of other members from participating organizations determines which members have main responsibility in managing coalition operations.
Table 10 shows that when independent coalitions have members working directly for the organization disseminate information, decision-making members meet monthly and quarterly. Table 12 shows the members from independent coalitions that are mainly responsible for managing recruitment strategies, which are members that directly work for the organization. Respondents from independent coalitions also highlighted how their members working directly for the organization use various strategies to recruit new stakeholders and sometimes work with for other organizations with similar interests. Therefore, based on this data, it can be inferred that independent coalitions decision-making members have low-level interaction requiring independent or differentiated collaboration processes (Smutny & Takahashi, 2001, p. 148).

Table 11 shows that when subsidiary coalitions sometimes have members of other participating organizations disseminate information, decision-making members meet more often such as daily and weekly. Table 13 shows that subsidiary coalitions use outreach/educational efforts as a main recruiting strategy. Respondents from subsidiary coalitions also highlighted how the interests of the parent organization influence the type of recruiting strategies their members use while completing various projects and assignments. Therefore, based on this data, it can be inferred that subsidiary coalitions decision-making members have high-level interaction requiring integrated or dependent collaborative processes. (Smutny & Takahashi, 2001, p. 148).

Clean Cities subsidiary coalitions are operated by a parent organization. In some cases, both the coalition and parent organization have similar interests. Independent coalitions are standalone and therefore, their collaborators can have several market interests that may or may not be similar to coalition interests. Because of the organizational structure of subsidiary coalitions, integrated or dependent collaborative processes are appropriate for helping coalitions build and/or maintain strong relationships with their stakeholders. However, for independent coalitions, independent or differentiated collaborative processes are appropriate for facilitating ongoing interaction between public and private stakeholders (Smutny & Takahashi, 2001, p. 148).
6.1.4 Develop Formal Agreements

Both independent and subsidiary organizations should have “formal agreements” or contracts to provide guidance to members of different ways to effectively manage collaborative efforts (Gazley, 2010, p. 655). Furthermore, similar to Clean Cities subsidiary coalitions, if a third party is involved in managing organizational activities, formal agreements are necessary to ensure collaborative interactions reflect all parties’ interests. Contracts are needed especially when a third party manages organizational operations to encourage members to not use any way possible but instead follow a formal set of rules while completing activities or assignments (Gazley, 2010, p. 655). All Clean Cities coalitions need to revise or establish formal agreements that can monitor and improve collaborative interactions. These formal agreements can identify both parties organizational responsibilities and performance expectations.

Subsidiary coalitions operations are determined by other participating organizations such as the parent organization. This arrangement also requires certain collaborative processes. However, because of this arrangement and the type of partnership entities determining subsidiary coalitions operations, formal agreements are necessary to guarantee all organizational decisions and collaborative initiatives reflect both parties’ interests. The type of organizational environment members from independent coalitions facilitate also requires certain collaboration processes. Therefore, because of this arrangement and independent coalitions structure being more “free standing”, establishing formal agreements can improve collaboration effectiveness. In all, establishing formal agreements creates collaboration policies, which can mitigate organizational problems and/or disruptions.
6.2 Implications

Based on project results and the few differences found between independent and subsidiary coalitions, one conclusion is that the differences in how these organization’s operate is to some extent based on experience, skill set, and strategies used by members involved in running or managing coalition operations. As for these results, one important finding is that only independent coalitions were found to have and/or use committees. However, research suggests that the establishment of a clear internal organizational structure, which consists of developing committees and task forces, is considered to help members deliver results successfully. A coalition’s internal organizational structure refers to the strategies members use to get work done and fulfill their missions. According to Bourcier, et al. (2006) studying the key characteristics that make coalitions successful, they discuss how:

“The creation of clear structures involves establishing steering and governance committees, task forces, or other entities and finding ways to share decision making across these groups, the membership, outside funders, and the lead agency. Clarifying the roles and responsibilities for each of these groups is considered to be important (Wolff, 2001). Coalition structure includes standing committees and task forces, and the presence and degree of use of formal bylaws, rules of procedure, and decision making. The range of skills, resources, credibility, and perspectives of the coalition’s members influences its structure. Ongoing engagement of a broad section of community representatives in active coalition membership and continuous development of the knowledge and skills needed to build an ongoing effective structure are associated with coalition success (Foster-Fishman, Berkowitz, Lounsbury, Jacobson, & Allen, 2001; Kegler et al., 1998).” (48s).

A comparison of the number of committees for coalitions that use committees and coalitions collaboration success ratings for various stakeholders is included in section 4.4 Clean Cities Committees: Independent Coalitions. The Clean Cities program is a community-based program and their stakeholders (including decision-making members and their broader stakeholder group) each have important duties and/or roles in running this organization. Therefore, one way to judge the success of this program is by examining coalitions collaboration success with the various stakeholders their members work with on projects and initiatives.

As shown in Figure 2, Figure 4 and Figure 6, the data suggests that the coordinators of independent coalitions with several committees rated various stakeholders higher for collaboration success than the independent coalitions with fewer committees. From these figures, it can be concluded that there is a relationship between establishing committees and the coalitions collaboration success with various stakeholders. In addition, only independent coalitions were found to allocate funding from their budgets to grants for stakeholders. According to the Clean Cities coordinator survey results, independent
coalitions have an average membership size of 73.42 and subsidiary coalitions have an average membership size 76.91. However, one assumption is that subsidiary coalitions may have access to more stakeholders because their members are working under a parent organization.

Based on these findings, one conclusion is that the use of committees allows coalitions to reach out to more stakeholders. There is also a third variable associated with the relationship between coalitions using committees and organizational success. Coalitions with strong leadership and ability to access needed resources (e.g., funds and staff) tend to have more committees. If coalitions develop strong leadership that appropriately facilitates as well as improves organizational operations members will have the support to obtain the resources needed to establish committees and other structural components associated with developing a clear internal structure.

Another assumption is that the parent organizations monitoring subsidiary coalitions are able to provide similar support and resources as the committees independent coalitions use to facilitate collaborative interactions. Therefore, subsidiary coalitions may not use committees as often as independent coalitions because their members are able to obtain the similar support from other participating organizations.

Even though a coalition’s broad/overarching organizational structure makes little to no difference in determining organizational success, the structure of coalitions serves as an important characteristic that determines the activities pursued and the strategies used by members in carrying out their organization’s mission. Collaborating parties must acknowledge a variety of different organizational operations while deciding which broad/overarching structure is most appropriate. Furthermore, as partnerships form, parties should first identify the needs of their stakeholders and the community. In some situations, organizations can address stakeholder needs by themselves while in other situations assistance is required from several entities. Second, both parties should identify the broad/overarching organizational structure of those that will be most involved in collaborative efforts. For example, if contracting organizations with stand-alone needs are most involved, independent organizations may have the support and resources to better address the needs of these organizations. Therefore, coalitions should acknowledge the broad/overarching structure of their collaborative partners in order to ensure collaboration effectiveness. Third, both parties should examine the collaborative environment as well as the type of projects or initiatives their members are pursing. For example, independent or dependent collaborative processes may be necessary. Acknowledging these organizational operations will indicate to public and private collaborators which broad/overarching organizational structure is most appropriate.
To ensure partnerships similar to the Clean Cities program remain successful, consistent funding is needed for members to 1) maintain appropriate staffing, 2) provide effective services, resources, and opportunities for their stakeholders and 3) develop committees, task forces, and other structural components associated with establishing a clear internal organizational structure. These partnerships also need various forms of support from other entities or organizations. For example, partnerships need government to develop new policy incentives that will support their organizational efforts. Collaborators also should have their own set of expectations regarding performance by developing and/or improving organizational polices and having the ability to effectively carry out their duties (roles) that are associated with running the organization. Most importantly, organizations need to build the skill sets of their members and create a knowledge-producing collaborative environment. Therefore, if members are able to learn from each other, develop new connections, work better with other entities, and acknowledge the overall advantages of collaborating, this can improve stakeholder commitment and contribution to organizational activities.
Chapter 7

7 Conclusion, Research Limitations, and Recommendations for Future Research

7.1 Conclusions

From this analysis, it can be concluded that even though a coalition’s broad/overarching structure makes little to no difference in determining organizational success, how an organization’s internal structure is developed and/or managed was found to be important to members in delivering results successfully. Observations’ regarding coalitions’ internal structure was also consistent with findings in the literature describing the success factors for public-private partnerships. Based on this, the best indicator of organizational success is when coalition members are able to develop this clear structure, consisting of managing different organizational operations such as committees, which are used to facilitate coalition activities and collaborative interactions as well as provide the necessary resources for members to effectively carry out tasks. Therefore, in forming partnerships both parties should explore the different ways to define a clear internal structure and manage these organizational operations in a way that is reflective of the needs and interests of their stakeholders and the community.

This is important given Clean Cities coalitions internal structure and other organizational operations needs are determined by the public entities involved in running this PPP. With respect to this organization, the DOE has main responsibility for developing rules that determine how this program is run as opposed to the Clean Cities coalition stakeholders. Therefore, the DOE could demand an internal structure that is inconsistent with the desires of coalition stakeholders. Some coalitions, however may decide not to follow these demands possibly because: 1) there is no need for these new organizational operations, 2) their decision-making members and broader stakeholder group may have no interest in meeting these new requirements, and 3) the organization may not have enough resources to support such changes. Therefore, if public sector entities alone determine an internal structure that is inconsistent with the interests and goals of coalition stakeholders this partnership may: 1) fail or 2) work improperly and not as intended. In order for this partnership to succeed both public and private parties must come together and negotiate an appropriate internal structure for their coalition.

However, both parties must consider a variety of different organizational operations as their members decide which structure is most appropriate. The ability of the parties to choose an appropriate structure potentially affects whether the partnership or coalitions will possess the key characteristics needed to run successfully. Therefore, if organizations are not examining their organizational and collaborative
environments then the strategies their members are using to carrying out activities, projects, and initiatives may not be appropriate.

7.2 Limitations of Study

The return rate for the Clean Cities coordinator survey used for this research project was 26%; 29 out of 109 coordinators completed the survey. It is not clear why more coordinators did not complete the survey. One potential reason for a low survey response may be that some coordinators may have thought there was no benefit in learning from others. Due to other responsibilities, coordinators may not have seen completion of the survey a priority. Another possible reason for the lower return rate is the time of year (summer) chosen for administering the survey. However, if this survey were to be administered again, a decision would be made whether it would be effective to distribute the survey at another time of the year.

Alwin (1977) discusses how one issue associated with a low return rate is “nonresponse bias”. This term refers to those that were a part of the population surveyed that chose not to complete the survey (135). Couper (2000) further describes how some causes of nonresponse are due to respondents being unavailable and/or unwilling. However, one issue with nonresponse bias is their being potential differences in respondents and nonrespondents answers for specific topics (Couper, 2000, p. 473). For example, those who completed the Clean Cities coordinator survey may have had different interests in both the program as well as the topics in the survey compared to the nonrespondents. Despite this, using different methods to obtain similar information can increase response rates or “sample coverage”. For example, in some cases, administering telephone interviews can lessen the use of surveys (Alwin, 1977, p. 138).

Some questions in the coordinators’ survey addressed coalition success, such as the questions about the coalitions collaboration success with various stakeholders. Coordinators may have interpreted these questions to reflect their success as a coalition coordinator. Therefore, responses to these parts of the survey may have reflected the coordinators’ self interests. One of the main concerns with biased responses is that these answers could have potentially influenced the conclusions being made about the program’s overall progress. The survey’s collaboration success questions also asked respondents to make “subjective [judgments]”. For example, “[a]sking people to categorize something as “high”, “low”, “large”, “small” and so forth, elicits the subjective nature of people’s judgment, which may stand in the way of determining the true opinion of the public” (Gupta, 2001, p. 156). Another potential reason for biased responses is selecting a “nonrepresentative sample”. Therefore, if more or different coalition
members were surveyed, these people may have had nonbiased responses that could have better represented the Clean Cities program (Gupta, 2001, pp. 153-154).

In addition, because some survey questions were about sensitive topics could have caused respondents to be dishonest. Survey respondents may be dishonest when discussing private matters “….because they are afraid to be politically incorrect or are mindful of social sanctions for unpopular opinions” (Gupta, 2001, p. 154). Another related issue concerns “collection bias” which is when survey topics are naturally controversial (Gupta, 2001, p. 155).

Chung and Monroe (2003) also highlight how one issue associated with survey response bias is “social desirability bias” (SD). “SD bias is the tendency of individuals to underestimate (overestimate) the likelihood they would perform an undesirable (desirable) action” (Chung & Monroe, 2003, p. 291). SD has also been described as “…the general tendency of individuals to present themselves in a manner that makes them look positive with regard to culturally accepted standard of behavior” (Chung & Monroe, 2003, p. 292). Clancy and Phillips (1972) further discuss how, “….people will attempt to give responses that will place them in a favorable light” (Clancy & Phillips, 1972, p. 924). As discussed, for the survey questions about their organization’s success such as coalitions collaboration success with various stakeholders, the respondents may have over or underestimated their answers. However, electronic surveys also entail privacy and confidentiality issues. For example, internet security issues could have increased the nonresponse rate as well as encouraged respondents to be dishonest about important subjects addressed in the Clean Cities coordinator survey. One alternative to web surveys is using “self-administered surveys” which can reduce the likeness of social desirability bias (Couper, 2000, p. 474).

Another way to avoid receiving biased responses is asking coalition success or progress in a different way or not as direct. In addition, another target population could have been surveyed such as other people also involved in running these coalitions. This new target population may have had a different set of responses for the sensitive topics addressed in the survey. For example, the survey target population could have been people working for both the DOE’s and the National Clean Cities administrative offices. However, surveying other people for this type of research project may be infeasible due to contacting a diverse group of people with a variety of different job responsibilities.

A third related issue is “bias in the survey instruments”. In some cases, how questions are written may encourage certain responses that may not be an accurate representation of peoples’ views about a topic. For example, if costs are discussed could change respondents’ views or opinions about a specific topic.
“Measuring the Organizational Effectiveness of Public-private partnerships: A Case Study of the Department of Energy’s Clean Cities Public-private partnership program”

(Gupta, 2001, p. 156). For example, in the Clean Cities coordinator survey, respondents’ answers may have been different if cost was considered in the following questions:

1) the methods coalitions use (replacement, reduction, elimination)
2) the strategies coalitions use. The respondents also had to rank the top three most effective strategies
3) coalition recruiting strategies

A fourth issue known as an internal validity issue is mortality. For this research project, the coordinators contact information on the Clean Cities website may have possibly not been up to date. For example, when the surveys were sent electronically to the respondents, some responses were out of office replies. These out of office replies were also out of date making it unclear about how up to date the coordinators contact information was on the Clean Cities website. Therefore, another potential reason for a low survey response is that some coordinators could have stopped working for the program as the survey was being administered. However, such occurrence is a loss because those coordinators may have had valuable knowledge about their organization that could have been useful in understanding how the different coalitions perform their work (Creswell, 2009, p. 163) (Bingham & Felbinger, 2002, pp. 24-25). One way to avoid using out of date information is contacting the Clean Cities headquarters directly and getting a hold of someone that can obtain updated information. A fifth issue known as an internal validity issue is selection bias. For example, the program may not be targeting the group that Clean Cities members are supposed to help because participation in this organization is voluntary. Therefore, the information collected may not be a true reflection of how the program affects their targeted stakeholder population (Bingham & Felbinger, 2002, pp. 24-25).

A sixth issue known as an external validity issue involves “representativeness of the sample” (Bingham & Felbinger, 2002, p. 25). For example, for this project, it is important to determine the extent to which the findings that were obtained from a specific group of people working for the Clean Cities program could be applied to another group of people working for a similar program at a different time. For this research project, the type of findings that could be applied to other organizations are the respondents suggested key characteristics that were supported by literature highlighting what should make the Clean Cities program successful. All other information relevant to the Clean Cities broad/overarching organizational structure can only be applied to other organizations that have a similar cultural environment (Bingham & Felbinger, 2002, p. 25).
A seventh issue involves using ordinal level data that has observations organized on a specific scale from least to greatest (Bingham & Felbinger, 2002, p. 34). Research suggests that there are several limitations associated with using ordinal level data. In the Clean Cities coordinator survey, there was a likert scale question asking respondents to rate their coalition’s collaboration success with various stakeholders as very successful, successful, somewhat successful, or not successful. One problem is that the numbers in this scale cannot identify “by how much more [successful]” is a respondent with high collaboration success ratings for various stakeholders compared to a respondent with low collaboration success ratings for the same stakeholders (Bingham & Felbinger, 2002, p. 34).

One last issue concerns “content validity”. In this analysis, the effectiveness of the Clean Cities program was examined by using statistical methods to compare the coalitions collaboration success ratings for various stakeholders (Bingham & Felbinger, 2002, p. 37). Qualitative methods were also used to examine coalition success. For example, qualitative methods were used to examine other important indicators of success such as the Clean Cities coalitions annual goals, if the coalitions have been able to achieve those goals, and the measures’ members use to determine if their organization’s annual goals have been met. The purpose in examining these categories was to identify the type of measures members use to determine overall progress and to identify coalition members’ decision process when determining how to improve organizational effectiveness. However, one issue is if the categories chosen were a good “representation” of other similar categories that were not used in this analysis (Bingham & Felbinger, 2002, p. 37).
7.3 Recommendations for Future Research

One concern raised by a respondent from an independent coalition was how key is personnel in managing coalitions. According this respondent,

“[O]ur board and coordinator are true volunteers. None of them receives a dime. Any revenue derived from service provided (grant writing, grant administration, event planning, etc.) is rolled back into coalition activities. I don't think many coalitions can state this but we can. All of our board members and coordinator have full time employment not related to the coalition. Many coalitions are interested in selling a product or service their staff has a stake in, or using coalition grants to pay staff salaries who are not engaged full time in clean cities business. Not here”.

Therefore, one interesting research question is exploring the importance of personnel in running a coalition. In other words, is Clean Cities coalitions more successful with volunteer leaders or a paid professional staff? A second interesting research question is if the coalitions’ sources of funding influence the type of activities members facilitate and the efficiency of organizational operations. A third interesting research question would involve asking Clean Cities members how their organization’s broad/overarching structure influences the mindset of all collaborative parties as they complete various tasks. A fourth interesting question is asking coalition members in various ways what they value or find important in running their organization.

Another potential method for this research project is conducting interviews or focus groups with a couple of different coalitions. Furthermore, attending coalition meetings could also provide an insider view of how these organizations work. In addition, each year the Clean Cities program hosts a yearly meeting for all coalition coordinators ("Coordinator Toolbox: Meetings and Events,"). At these meetings or events, surveys could be used as another way to obtain information from members about how their coalition performs work.

A fifth interesting research question is how effective are the Clean Cities coalition websites in detailing their organization’s successes and current activities. An in-depth analysis of the Clean Cities websites could determine how effectively these sites inform their decision-making members and broader stakeholder group regarding coalition overall progress and whether these sites are regularly accessed by coalition members and stakeholders. Such analysis could include if and how coalitions use other electronic media (e.g., social medias) to communicate and inform others regarding the coalitions’ current work.
The effectiveness of coalition websites in detailing information is important because one concern is the ability of stakeholders to access all information needed to make an informed decision of whether their organization or business should collaborate with the Clean Cities coalitions. Therefore, if these stakeholders cannot find the information needed to make an informed decision, their organization may decide to work with other entities.

An example of someone not able to find the information needed on a Clean Cities coalition website is a stakeholder working for a Detroit automotive supplier business. This type of company mainly supplies directly to car companies (Detroit Automotive Supplier Business, September 20, 2010). This stakeholder was contacting Clean Cities while considering whether the company this person works for should collaborate with a Detroit Clean Cities coalition. This stakeholder highlights his/her experience in exploring the Detroit Clean Cities website:

“Clean Cities is more about community and local engagement, whereas our company is more concerned with technology development and selling products to OEMs (we do not sell complete cars). It was worth investigating whether the Clean Cities chapter in this area had any interest in technology development given that the Detroit metro area is a hub for the automotive industry. Since CC [Clean Cities] does not engage in this sort of activity, there was no information relevant to me on the website. I ended up having a productive discussion with someone at the Detroit office…, but am not sure if it is worth it for my company to pursue a relationship. I think I quickly browsed through all of the links [coalition’s website]…, but the most useful information was obtained from talking to someone over the phone” (Detroit Automotive Supplier Business, September 20, 2010).

This stakeholder is claiming that Clean Cities goals were not related to their company’s goals and therefore, working with this business would not be in the interests of their company members. Furthermore, the Clean Cities coalition websites may provide good quality information for their various stakeholders, but the information this stakeholder was looking for was not provided on this coalition’s website. This may be because Clean Cities may target other markets unrelated to this automotive supplier’s market goals. In addition, this stakeholder highlighted how the coalition was too community based and that their company had a business focus. Therefore, one question to explore is how can coalitions meet the needs of specific stakeholders while satisfying broad community interests?

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The automotive supplier business that this stakeholder works for does not sell in the market complete vehicles like other companies such as GM or Toyota.

OEM stands for Original Equipment Manufacturer.
8 References


“Measuring the Organizational Effectiveness of Public-private partnerships: A Case Study of the Department of Energy’s Clean Cities Public-private partnership program”


Detroit Automotive Supplier Business, E. (September 20, 2010).


“Measuring the Organizational Effectiveness of Public-private partnerships: A Case Study of the Department of Energy’s Clean Cities Public-private partnership program”


Respondent A. (January 14, 2010). Works in Clean Cities departments providing information about the alternative fuel technologies being promoted by the Clean Cities program.

Respondent A. (January 25, 2010). Works in Clean Cities departments providing information about the alternative fuel technologies being promoted by the Clean Cities program.


Respondent C. (June 8, 2010). Works for a coalition located in the Northeast.


Appendixes

9.1 Appendix A1: Survey Cover Letter

The following information was displayed before the participant took the survey to inform them of their compliance with respect to their participation in this internet survey.

Cover Letter to Survey or Informed Consent Information

Information about Survey on Clean Cities Coalitions

Thank you for taking time to participate in this internet survey on the Department of Energy’s (DOE’s) Clean Cities Public-Private Partnership Program. This survey’s questions will be used determine each of the coalitions characteristics and to evaluate the strategies that work best for each coalition type.

To complete this survey, you have to be 18 years of age or older and a Clean Cities Coordinator. If you are not a coordinator for one of the Clean Cities coalitions, please ignore this information and do not complete this survey. You will have two weeks from the day the email is sent to complete this internet survey. Please do not write your name or the name of any organizations that your coalition currently works with on the survey. Also, do not write down any personal identifiers on the survey such as the name of the city where your coalition is located. To ensure confidentiality, please do not reply to the email that has been sent to you containing a link to access the survey and information about the survey questions.

The following information explains why this survey is being completed, your terms of agreement in completing this survey, the benefits associated with your participation in this survey, and the potential risks involved.

INTRODUCTION
You have been selected to take part in a research study that involves evaluating the DOE’s Clean Cities Public-Private Partnership Program.

WHAT TYPE OF SURVEY IS THIS
This survey will take you an estimated of 20 minutes to complete. The first section of the survey involves identifying your coalition’s characteristics while the second part of the survey consists of evaluating, which strategies work best for your coalition type.

POTENTIAL RISKS
There are no foreseen potential risks from your anonymous participation in this survey. None of the questions in the survey encourages the participant to discuss criminal wrongdoings. Therefore, the participant will not put at risk to criminal or civil liability issues. In addition, because the participant is not subject to criminal or civil liability issues, no damage will be done to their financial standing, reputation, and employability. If at any time, you wish to stop taking the survey you can end and your information will not be recorded.

BENEFITS ASSOCIATED WITH PARTICIPATION IN SURVEY
The potential benefits gained from your participation in this survey is that you will gain further knowledge of the different characteristics of Clean Cities coalitions and the variety of strategies the coalition members have used to achieve their ultimate goals. Once my thesis has been completed, I will send the participant (you) a summary of the results of my research project.
The results of this survey will enhance the knowledge in the science, technology, and policy fields. This research project is important for the policy field because the results will enable new understanding of the different ways public-private partnerships help society achieve science and technology goals or initiatives. Most importantly, the outcome of this thesis will detail the characteristics that make the program successful. In addition, the results of this survey will help detail the different ways to improve similar partnerships through understanding the type of challenges these coalitions have come across overtime. All of this information will further identify the best practices or what works the best for the coalitions and how similar partnerships can achieve the same success too.

CONFIDENTIALITY AGREEMENTS
The survey is anonymous. Your name will not be known or revealed in any way. Therefore, your responses will not be linked to you or stand out alone (Please do not write your name or the name of any organizations that your coalition currently works with on the survey). Also, do not write down any personal identifiers on the survey such as the name of the city where your coalition is located. To ensure confidentiality, please do not reply to the email that has been sent to you containing a link to access the survey and information about the survey questions.

The data or information compiled from the surveys will be distilled into appropriate results/representation. The information from the surveys will be shown to only my primary master thesis adviser, Dr. James Winebrake (Dean of the College of Liberal Arts and Professor of Science, Technology and Society/Public Policy) and my thesis committee members, Dr. Franz Foltz (Associate Professor of Science, Technology and Society/Public Policy) and Professor M. Ann Howard (Senior Associate Dean and Professor of Science, Technology and Society/Public Policy)

Finally, the information from the surveys will be destroyed after my Master Thesis has been completed. The results of the project will be published. I reserve the right to use the information from the surveys completed.

YOUR PARTICIPATION RIGHTS
This survey is completely voluntarily and therefore, you do not have to participate. If you feel uncomfortable taking the survey you may stop at any time. If you choose to not participate in this survey or stop completing the survey at any time you will not lose the benefit of receiving a summary of the results of my research project. If you do decide to exit the survey, please exit the web page and all of your information will not be saved.
9.2 Appendix A2: Clean Cities Coordinator Survey

1) Where is your coalition located?
   a) Connecticut, Vermont, Massachusetts, Maine, Rhode Island, New Hampshire
   b) New York, New Jersey, US Virgin Islands, Puerto Rico
   c) Delaware, Virginia, West Virginia, Maryland, District of Columbia, Pennsylvania
   d) Florida, Georgia, Alabama, Mississippi, Kentucky, Tennessee, South Carolina, North Carolina
   e) Indiana, Michigan, Ohio, Illinois, Wisconsin, Minnesota
   f) New Mexico, Texas, Arkansas, Louisiana, Oklahoma
   g) Nebraska, Iowa, Missouri, Kansas
   h) Colorado, Utah, Wyoming, Montana, North Dakota, South Dakota
   i) Nevada, Pacific Islanders, Arizona, Hawaii, California
   j) Washington, Oregon, Alaska, Idaho

2) What is the estimated population of the city/town/village where your coalition is located?
   ______________________________

3) How long has your coalition been in existence?
   ______________________________

4) How many entities or organizations are represented in your coalition?
   ______________________________

5) Who comprises your coalition? (Check all that apply)
   a) Local government entities
   b) State government entities
   c) Federal government entities
   d) Schools (k-12)
   e) Post-secondary schools (e.g., universities, colleges, community colleges)
   f) Trade associations
   g) Non-profits
   h) Metropolitan planning organization
   i) Regional planning organization
   j) Small businesses (500 employees or less)
   k) Large businesses (greater than 500 employees)
   l) Other ________________________________

6) If your coalition includes small businesses (500 employees or less), please list the type of business or industry (e.g., Law Firms).

7) If your coalition includes large businesses (greater than 500 employees), please list the type of business or industry (e.g., Airlines).
8) On average, how frequently does your coalition have contact with the following entities?

Rarely = 1-2 times every 6 months, Occasionally = 1-2 times every 3 months, Frequently = 1-2 times every month

a) Local Government Offices
   Never      Rarely   Occasionally   Frequently   N/A
b) State Government Offices
   Never      Rarely   Occasionally   Frequently   N/A
c) Federal Government Offices
   Never      Rarely   Occasionally   Frequently   N/A

9) Does your coalition have committees?

   a) Yes
   b) No

10) If your coalition does have committees, how many?

_____________________

11) If you have answered yes in the previous questions, what type of committees does your coalition use?

   Please list in the space provided.

12) How does your coalition recruit members who will be involved in setting goals and/or making decisions for your organization? (These people can be a board member, a stakeholder, or other organizational member)

   Please explain in the space provided.

13) Please indicate the level of difficulty your coalition has had in recruiting members who will be involved in setting goals and/or making decisions for your organization. (These people can be a board member, a stakeholder, or other organizational member)

   a) Very Difficult
   b) Moderately Difficult
   c) Somewhat Difficult
   d) Not Difficult

14) If you have answered (a) Very Difficult, (b) Moderately Difficult, or (c) Somewhat Difficult in the previous question, why has your coalition had difficulty in recruiting members who will be involved in setting goals and/or making decisions for your organization? (These people can be a board member, a stakeholder, or other organizational member)

   Please explain in the space provided.
15) For each of the entities your coalition works with rate how successful collaboration has been using a scale of 1-4, 1 being the least successful and 4 being the most successful.

1=Not Successful, 2= Somewhat Successful, 3= Successful , 4=Very Successful

a) Local government 1 2 3 4 N/A  
b) State government 1 2 3 4 N/A  
c) Federal government 1 2 3 4 N/A  
d) Schools (k-12) 1 2 3 4 N/A  
e) Post-secondary schools (e.g., universities, colleges, community colleges) 1 2 3 4 N/A  
f) Trade associations 1 2 3 4 N/A  
g) Non-profits 1 2 3 4 N/A  
h) Metropolitan planning organization 1 2 3 4 N/A  
i) Regional planning organization 1 2 3 4 N/A  
j) Small businesses (500 employees or less) 1 2 3 4 N/A  
k) Large businesses (greater than 500 employees) 1 2 3 4 N/A  

16) What is the governing structure of your coalition (e.g., board of directors, informal organization)?

Please explain in the space provided.

17) Is your coalition independent or is it a subsidiary of a larger organization?

Please explain in the space provided.

18) Are there entities or organizations that your coalition works with that have more influence over coalition decisions than do others?

a) Yes  
b) No  

19) If you have answered yes in the previous question, if so, then who?

Please explain in the space provided.

20) How often does your coalition hold meetings with your decision-making members? (A “decision-making member” is a board member, a stakeholder, or other organizational member that is involved in setting goals and/or making decisions for the organization)

a) Daily  
b) Weekly  
c) Every other week  
d) Monthly  
e) Quarterly  
f) Yearly  
g) Every two years  
h) We do not hold meetings  
i) Other ________________________
21) Other than meetings, how do the decision-making members of your coalition communicate? (Check all that apply)

- a) In person/face-to-face
- b) By email
- c) By phone
- d) Social media (e.g., Facebook, Twitter, Skype, YouTube)
- e) Instant messaging
- f) Other ______________________

22) Identify the top three ways your coalition’s decision-making members communicate from the list in the previous question.

First ______________________
Second ______________________
Third ______________________

23) How does your coalition share information with your decision-making members? (Check all that apply)

- a) Coalition email
- b) Newsletter
- c) Social media (e.g., Facebook, Twitter, Skype, YouTube)
- d) Coalition’s Website
- e) Other ______________________

24) Identify the top three ways in which your coalition shares information with your decision-making members from the list in the previous question.

First ______________________
Second ______________________
Third ______________________

25) Who is responsible for disseminating information to your coalition’s decision-making members?

Please explain in the space provided.

26) Does your coalition have annual goals?

- a) Yes
- b) No

27) If you have answered yes in the previous question, what are your coalition’s annual goals?

Please explain in the space provided.

28) If your coalition has annual goals, has your coalition been able to achieve those goals?
29) If you have answered yes in the previous question, what measures has your coalition used to determine if your annual goals have been met?

Please explain in the space provided.

30)

According to the Department of Energy’s (DOE’s) Clean Cities program, “[t]he goal of Clean Cities is to expand and stimulate alternative fuel and advanced technology markets to reduce petroleum consumption by 2.5 billion gallons by 2020”.

Which of the following three methods has your coalition used? (Check all that apply)

a) “Replacement: Replacing petroleum used in the transportation sector with alternative fuels and low-level blends of non-petroleum replacement fuels.”

b) “Reduction: Reducing petroleum use by promoting energy efficiency in vehicles through fuel-efficient, advanced technology vehicles.”

c) “Elimination: Eliminating petroleum or other fuel use by promoting idle reduction, greater use of mass transit systems, and other congestion mitigation approaches.”

31) Which of the following strategies does your coalition use in carrying out the coalition’s mission? (Check all that apply)

a) Workshops
b) Conferences
c) Coalition meetings
d) Outreach/educational events for the public
e) Recruiting stakeholders
f) Building partnerships with industries
g) Other ______________________________

32) Identify the top three strategies that have been the most effective for your coalition from the list in the previous question.

First____________________________
Second____________________________
Third____________________________
33) Has your coalition used any of the following outreach/educational approaches? (Check all that apply)

a) Public events (e.g., expo)  
b) Internet to disseminate information  
c) Television or radio advertisements  
d) Local/public meetings  
e) We as of right now, do not use outreach/educational approaches  
f) Other ________________________________

34) Identify the top three outreach/educational approaches that have been most effective for your coalition from the list in the previous question.

First____________________________  
Second____________________________  
Third____________________________

35) How often does your coalition meet with your broader stakeholder group?

a) Daily  
b) Weekly  
c) Every other week  
d) Monthly  
e) Quarterly  
f) Yearly  
g) Every two years  
h) We do not hold meetings  
i) Other ________________________

36) Does your coalition advocate for legislative issues or pending legislation?

a) Yes  
b) No

37) If you have answered yes in the previous question, at which level(s) of government? (Check all that apply)

a) Local  
b) State  
c) Federal

38) If your coalition advocates for legislative issues or pending legislation, what type of techniques have your decision-making members used? (Check all that apply)

a) Arrange and attend meetings with legislators  
b) Sponsoring events and inviting key legislators  
c) Writing letters  
d) Other ________________________________
39) Which of the following challenges, if any, has your coalition experienced? (Check all that apply)

a) Lack of funding  
b) Weak stakeholder base  
c) Finding solutions or options at a low price for stakeholders  
d) Lack of autonomy in making decisions  
e) Difficulty working with stakeholders  
f) None of the above  
g) Other ________________________________

40) Identify the top three challenges that your coalition has come across in carrying out activities from the list in the previous question.

First____________________________  
Second____________________________  
Third____________________________

41) Which of the following are important to your coalition in achieving your goals and carrying out your mission? (Check all that apply)

a) Active recruitment of stakeholders  
b) Financial resources (e.g., funding)  
c) Outreach/educational events  
d) Communication among the private/public stakeholders your coalition works with in pursuing various initiatives  
e) Working with stakeholders that have a wide variety of different skill sets (e.g., technical skill sets)  
f) Other ________________________________

42) How does your coalition help your stakeholders? (Check all that apply)

a) Notify our stakeholders of grant opportunities  
b) Help our stakeholders apply for grants  
c) Provide or assist stakeholders in obtaining alternative technologies  
d) Manage education programs to teach the public about alternative technologies  
e) Arrange times when alternative technology company experts can speak to our stakeholders  
f) Inform stakeholders of tax incentives for alternative technologies  
g) None of the above  
h) Other ________________________________

43) Identify the top three ways that your coalition helps your stakeholders from the list in the previous question.

First____________________________  
Second____________________________  
Third____________________________
44) What is your coalition’s annual budget?
___________________________

45) About what percentage of funding did your coalition receive from the following sources:

   Public sources: ________________________

   Non-public sources: ________________________

46) Please specify the percentage of funding your coalition has allocated to the following areas:

   Staff ________________________
   Grants for stakeholder ________________________
   Public outreach activities ________________________
   Other (specify) ________________________

47) Does your coalition have paid employees who report directly to the coalition?

   a) Yes
   b) No

48) If you have answered yes in the previous question and your coalition has paid employees:

   How many full-time employees?
   ________________________

   How many part-time employees?
   ________________________

49) Is the coalition’s coordinator paid or unpaid by your organization?

   a) Paid
   b) Unpaid
   c) No, externally supported

50) If you have answered (a) Paid in the previous question, what is the job status of the coalition’s coordinator?

   a) Full-time
   b) Part-time
51) **What are the major responsibilities of the coalition coordinator? (Check all that apply)**

- a) Recruiting new stakeholders
- b) Advocating for legislative issues or pending legislation
- c) Organizing outreach/educational events
- d) Writing reports
- e) Creating newsletters
- f) Serving as a consultant to government officials informing them of the alternative fuel vehicle market
- g) None of the above
- h) Other _____________________________

52) **From the major responsibilities listed in the previous question, identify the top 3 responsibilities the coordinator spends the most time doing.**

- First____________________________
- Second____________________________
- Third____________________________

53) **Please add any additional comments you feel would help in understanding how your coalition does its work.**
9.3 Appendix B1: Number and Percentage of Respondents from Independent and Subsidiary Coalitions that answered Survey Questions

Table 16: Survey questions about coalitions membership size and population size where coalitions are located

<table>
<thead>
<tr>
<th>Attribute/Survey Question</th>
<th>Coalition Type</th>
<th>Number and Percentage of Respondents</th>
<th>Category Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q#4: Membership size²¹</td>
<td>Independent</td>
<td>9 (47.36%)</td>
<td>73.42</td>
</tr>
<tr>
<td></td>
<td>Subsidiary</td>
<td>10 (52.36%)</td>
<td>76.91</td>
</tr>
<tr>
<td>Q#2: What is the estimated population of the city/town/village where your coalition is located?</td>
<td>Independent</td>
<td>13 (50%)</td>
<td>2,211,538</td>
</tr>
<tr>
<td></td>
<td>Subsidiary</td>
<td>13 (50%)</td>
<td>1,962,199</td>
</tr>
</tbody>
</table>

²¹The category membership size could not be used in this project’s statistical analysis because certain statistical assumptions were not met. Therefore, the mean values for the category, population size of where coalitions are located were not used in this analysis.
Table 17: Survey questions about the Clean Cities Coordinator and Coalition Committees

<table>
<thead>
<tr>
<th>Attribute/Survey Question</th>
<th>Coalition Type</th>
<th>Number and Percentage of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q#49: Is the coalition’s coordinator paid or unpaid by your organization?</td>
<td>Independent</td>
<td>13 (50%)&lt;br&gt;Answer Selections: Paid 8 (61.53%)&lt;br&gt;Unpaid 2 (15.38%)&lt;br&gt;Externally Supported 3 (23.07%)</td>
</tr>
<tr>
<td></td>
<td>Subsidiary</td>
<td>13 (50%)&lt;br&gt;Answer Selections: Paid 13 (100%)</td>
</tr>
<tr>
<td>Q#50: If you have answered (a) Paid in the previous question, what is the job status of the coalition’s coordinator?</td>
<td>Independent</td>
<td>10 (40%)&lt;br&gt;Answer Selections: Part time 3 (30%)&lt;br&gt;Full time 7 (70%)</td>
</tr>
<tr>
<td></td>
<td>Subsidiary</td>
<td>15 (60%)&lt;br&gt;Answer Selections: Part time 8 (53.33%)&lt;br&gt;Full time 7 (46.66%)</td>
</tr>
<tr>
<td>Q#9: Does your coalition have committees?</td>
<td>Independent</td>
<td>14 (50%)&lt;br&gt;Answer Selection: Yes 7 (25%)</td>
</tr>
<tr>
<td></td>
<td>Subsidiary</td>
<td>14 (50%)&lt;br&gt;Answer Selection: No 21 (75%)</td>
</tr>
</tbody>
</table>
Table 18: Survey questions about coalition strategies, methods, and meetings held with decision-making members

<table>
<thead>
<tr>
<th>Attribute/Survey Question</th>
<th>Coalition Type</th>
<th>Number and Percentage of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q#31: Which of the following strategies does your coalition use in carrying out the coalition’s mission?</td>
<td>Independent</td>
<td>13 (50%)</td>
</tr>
<tr>
<td></td>
<td>Subsidiary</td>
<td>13 (50%)</td>
</tr>
<tr>
<td>Question #30: Which of the following three methods has your coalition used?</td>
<td>Independent</td>
<td>14 (50%)</td>
</tr>
<tr>
<td></td>
<td>Subsidiary</td>
<td>14 (50%)</td>
</tr>
<tr>
<td>Question #20: How often does your coalition hold meetings with your decision-making members? (A “decision-making member” is a board member, a stakeholder, or other organizational member that is involved in setting goals and/or making decisions for the organization)</td>
<td>Independent</td>
<td>13 (52%)</td>
</tr>
<tr>
<td></td>
<td>Subsidiary</td>
<td>12 (48%)</td>
</tr>
<tr>
<td>Answer Selections:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monthly 5 (38.46%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quarterly 6 (46.15)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other 2 (15.38%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Answer Selections:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daily 1 (8.33%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weekly 1 (8.33%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monthly 4 (33.3%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yearly 2 (16.67%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other 2 (16.67%)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 19: Survey questions about disseminating information, coalition recruiting strategies, and recruiting difficulties

<table>
<thead>
<tr>
<th>Attribute/Survey Question</th>
<th>Coalition Type</th>
<th>Number and Percentage of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q25: Who is responsible for disseminating information to your coalition’s decision-making members?</td>
<td>Independent</td>
<td>13 (50%)</td>
</tr>
<tr>
<td></td>
<td>Subsidiary</td>
<td>13 (50%)</td>
</tr>
<tr>
<td>Q#12: How does your coalition recruit members who will be involved in setting goals and/or making decisions for your organization? (These people can be a board member, a stakeholder, or other organizational member)</td>
<td>Independent</td>
<td>12 (52.17%)</td>
</tr>
<tr>
<td></td>
<td>Subsidiary</td>
<td>11 (47.82%)</td>
</tr>
<tr>
<td>Q#14: If you have answered (a) Very Difficult, (b) Moderately Difficult, or (c) Somewhat Difficult in the previous question, why has your coalition had difficulty in recruiting members who will be involved in setting goals and/or making decisions for your organization? (These people can be a board member, a stakeholder, or other organizational member)</td>
<td>Independent</td>
<td>8 (47.05%)</td>
</tr>
<tr>
<td></td>
<td>Subsidiary</td>
<td>9 (52.94%)</td>
</tr>
</tbody>
</table>