Crafting The Public: Cultural Theory and the Mechanisms of Public Participation.

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Abstract

Requirements regarding participation by the public in planning and decision making functions of Metropolitan Planning Organizations have become more detailed over the past several decades by adding more groups and individuals to the list of those who should be included in agency planning efforts. This increased emphasis on public participation in MPOs makes the design and selection of particular participation mechanisms by MPO planning staff an important subject for study. The extant literature on public participation takes a view of the planner as one who is able to interpret the existing technical, social, and political requirements of a planning task and match them with the appropriate public participation mechanism. However, this view of the planner overlooks his or her own understanding of the role of the public in agency decision making. This dissertation employs Grid-Group Cultural Theory to explore how a planner's worldview impacts their selection of particular public participation mechanisms. Data were collected using an online survey instrument and analyzed using multinomial logistic regression. Findings indicate that those planners who held a hierarchist worldview were less likely than egalitarians and individualist planners to select mechanisms that are more intensive (in their requirements for communication). In addition, the research finds that factors internal to the MPO including the budget, project schedule, political priorities, the type of projects, safety issues and agency priorities also have an impact on the mechanisms for public participation selected by MPO planning staff.

Dedication

The work associated with developing and executing this dissertation would have proved too daunting a task for me without the kind assistance I was given by friends, colleagues, and teachers. I would like to thank the members of my committee, Dr. Laura Jensen, Dr. Thomas Sanchez, and Dr. James Wolf, for their support and feedback, which helped to improve the final product. My chair, Dr. Brian J. Cook, deserves special recognition for his efforts to guide and focus my work on the dissertation and who played no small part in marshaling the project toward its completion.

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Chapter 1 - Introduction

1.1 Introduction

On July 6th, 2012, President Obama signed Public Law 112-141, known as the Moving Ahead for Progress in the 21st Century Act (MAP-21). This legislation laid out the administration's approach to funding the programs and policies governing the construction and maintenance of the nation's surface transportation system for 2013 and 2014. As with past surface transportation legislation, like the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users of 2005 (SAFTEA-LU), MAP-21 is a comprehensive approach to distributing federal funds to state and local governments responsible for the planning, design, construction, and implementation of highway, public transit, bridge, and non-motorized transportation programs (Kirk, Frittelli, Luther, Mallet, and Peterman 2012). While MAP-21 made several changes to planning requirements for Metropolitan Planning Organizations (MPOs), it maintained the existing approach that mandates the existence of MPOs in urbanized areas with more than 50,000 persons and "MPOs are still required to develop long-range plans" (Kirk et al. 2012, p. 19). The requirement to develop a long-range transportation plan is accompanied by a requirement that:

> Each metropolitan planning organization shall provide citizens, affected public agencies, representatives of public transportation employees, freight shippers, providers of freight transportation services, private providers of transportation, representatives of users of public transportation, representatives of users of pedestrian walkways and bicycle transportation facilities, representatives of the disabled, and other interested parties with a reasonable opportunity to comment on the transportation plan. (Code of Federal Regulations, Title 23, Sec. 134(6)(A))

To carry out these charges, federal regulations require that MPOs shall hold public meetings, describe plans using visualization techniques, and post information in an electronic form on publicly available websites (Code of Federal Regulations, Title 23, Sec. 134(6)(B)). These narrow guidelines seem to allow MPOs significant latitude in designing and implementing public participation mechanisms in the development of their Long-Range Transportation Plan (LRTP).

Federal regulations governing the requirements for public participation processes make "[t]he MPO responsible for actively involving all affected parties in an open, cooperative, and collaborative process that provides meaningful opportunities to influence transportation decisions" (FHWA 2013, p. 39). This charge leaves planning staff in MPOs with significant discretion to decide who are the "affected parties," what constitutes an "open, cooperative, and collaborative process," and what can be considered "meaningful opportunities to influence transportation decisions." As the Transit Cooperative Research Program notes, "This lack of definition allows flexibility to agencies to tailor their outreach to match the unique set of circumstances surrounding their agencies, their projects, and the communities they serve" (TCRP 2011, p. 2).

The construction of a public participation process and the crafting of working definitions the affected parties and which methods of involvement are meaningful in providing opportunities to influence transportation planning is itself a complex task. There are also many other factors to consider when designing the process. While the flexibility provided by law can allow for many responses to diverse circumstances, it also means that public participation strategies at MPOs "are without a standard or prescribed method of implementation" (TCRP 2011, p. 2). Regardless of the approach adopted, at a minimum, any process must wrestle with how to inform the public

of proposed agency actions, decide how and when to receive the opinion of the members of the public, and devise a strategy for the incorporation and/or response to the input that is received from the public. A public participation process may also seek to bring affected or interested members of the public together to discuss the proposed agency action to develop a community consensus for a desired action, or gain insights from local citizens for the purpose of creating new and innovative approaches to public problems (Nabatchi and Amsler 2014; Bryson et al. 2013; Webler and Tuler 2002). While there are a great number of different approaches to public participation mechanisms, there are a limited number of combinations that seem to exist. As Lee (2011) notes, "despite the apparent heterogeneity of methods, many methods involve routine combinations of a limited palette of practices" (p. 21).

This research aims to explore how understanding the differences in the preferences for particular forms of social relations among transportation planning staff in the nation's MPOs might help explain why certain public participation mechanisms are selected over others within that "limited palette of practices." The main idea animating this research is that public participation mechanisms create structures of social relations that are reflective of certain values and a particular conception of the public's role in agency decision-making. These values, in turn, stem in part from the worldviews of planners. To investigate such a possibility, this research adopts the perspective afforded by Grid-Group Cultural Theory (GGCT) to investigate how preferences for specific types of social relations influence the selection of particular sets of public participation mechanisms in Long Range Transportation Plans developed by planning staff in Metropolitan Planning Organizations.

Grid-Group Cultural Theory (GGCT) posits two dimensions of social organization, "grid" and "group." Grid refers to "the degree to which our lives are circumscribed by

conventions or rules, reducing the area of life that is open to individual negotiation" (Hood 1998, p. 8; see also Altman and Baruch 1998, pp. 771-772). Group, meanwhile, "denotes the extent to which individual choice is constrained by group choice, by binding the individual into a collective body" (Hood 1998, p. 8; see also Altman and Baruch 1998, p. 771). These two dimensions combine to form a typology of worldviews (Table 1): 1) the high-grid, high-group *Hierarchist*; 2) the low-grid, high-group *Egalitarian*; 3) the *Individualist*, characterized by low-grid, low-group; and 4) the high-grid, low-group *Fatalist*. Each of these four worldviews carries with it preferences associated not only with individual choices, but also with the type of institutions that support and validate these preferences (Jenkins-Smith et al. 2012, p. 8).

Table 1 - Grid-Group Cultural Theory Worldviews

	Low-Group	High-Group
High-Grid	Fatalist	Hierarchist
Low-Grid	Individualists	Egalitarians

To illustrate how these different worldviews can help to explain the interface between preferences and social relations, consider the work performed by Lotte Jensen (1998) in her study on democratic reforms in a Danish public housing program. Jensen describes the difficulties encountered by "activists from grass-root movements and left-wing parties" who pushed for tenants to have greater control over the public housing projects in which they lived (1998, p. 127). This push led to a situation in which tenants were empowered to make decisions on a wide range of practical matters, from the amount of rent to be paid by tenants, to the construction of communal homes, to the budget and schedule for facility maintenance and upgrades (pp. 128-129). The victory of these activists created a structure of social relations in decision making that required the residents to engage in "[t]he enormous and demanding tasks of

internal co-ordination, conflict mediation and integration…" (p. 130). Individual tenants with an egalitarian worldview, who pushed for the system, readily accepted this task. However, after establishing this approach, two changes in the Danish housing market created numerous problems for the existing system of housing governance.

First, the makeup of tenants changed when many of the original egalitarians were replaced by individuals "whose life experiences are marked by lack of choice in housing, education, and on the working market; in short, *fatalists*" (p. 132). Second, an increase in the overall housing stock available in the country increased competition between the public housing sector and private home provision. This led to the housing associations in charge of the public housing projects moving to make the public housing units competitive with private housing by reimbursing individual tenants for building improvements, instead of focusing on collective approaches to upgrading the housing units and by relaxing "a number of formal restrictions on individual use of apartments…" (Jensen 1998, p. 132). These changes also resulted in an increase in the number of tenants who did not subscribe to the egalitarian "worldview" and thus undermined the ability of the existing structural forms of managing public housing (in the form of tenant-run housing associations) to govern their communities as they had before.

Each of the three groups (egalitarians, fatalists, individualists) had a different understanding of what a participant's role in a democratic system entailed. For egalitarians, people must be willing and able to participate in deciding on a course of action in a collective manner, successfully navigate the divide between "individual ideas and communal purposes," and work to create a shared spirit of community. Fatalists, on the other hand, await others to make decisions for them, while individualists treat their role in a democratic system as making decisions that are best for them through alliance building. When this isn't possible, individualists

will do their best to leave the situation before they allow collective decisions to infringe on them. Thus, we can see how the decision-making structures established along the lines of social relations that are legitimate and desirable for one of the GGCT worldviews (egalitarians) might prove to demand too much of another group (fatalists) and be seen as oppressive by a third (individualists).

Grid-Group Cultural Theory (GGCT) is particularly appropriate to apply to the study of the choice of public participation mechanisms by MPO planning staff because it conceives of individual preferences and values as intimately tied to social relationships and structures (Thompson, Ellis, and Wildavsky 1990). This connection between individual preferences and a "pattern of social relations" can help to fill several voids in current approaches to understanding public participation in public decision making. First, the prescriptive literature, which serves to guide public administrators on constructing public participation practices, often takes an approach that includes "fundamental lessons, principles, objectives or criteria of 'good' citizen participation" (Webler 1999, p. 57). The approach can thus guide administrators in their decisions about which mechanisms to employ for a given problem. The guidance is often organized into stages or phases that serve to introduce these criteria to the administrator in a particular order.

For instance, Bryson, Quick, Slotterback, and Crosby (2013) conduct a comprehensive interdisciplinary literature review from which they derive nine possible purposes for using public participation, and provide twelve design guidelines for planning staff to consider. Bryson et al. are explicit with regard to their intention that by surveying the existing literature they aim to provide practitioners with design guidelines based on empirical evidence, logic and theory. However, they caution that the "consistent implication of design science and the diversity of

evidence-based research findings synthesized here is that successful participation requires designing iteratively, in response to specific purposes and contexts" (2013, p. 24). By asking planners to engage in an iterative design process that appreciates differences in "specific purposes and contexts," Bryson et al. underplay a potentially important difference in the role that planners feel the public should have in agency decision-making. For instance, a public participation process "may use one-way, two-way, and/or deliberative communication," (Nabatchi and Amsler 2014, p. 73) to structure communications between an agency and the public. One-way communication focuses on delivering information from a sender to a receiver, while two-way communication is structured to accommodate the exchange of information between the agency and the public, deliberative communication, on the other hand is crafted to define and solve problems. How is a planner to decide which of these modes of communications is appropriate for a given situation?

Using one-way communication methods such as brochures, flyers, and postings on agency websites to announce a public hearing on the adoption of a Long Range Transportation Plan is certainly one approach. Yet, so too is holding a series of public workshops focused around small-group discussion, deliberation, with the aim of generating new approaches to transportation policy the LRTP is designed to address. Which approach does a planner choose? Bryson et al. suggest that planners can decide by asking 'What are the purposes of this participation process?' (2013, p. 26), but they immediately complicate the exercise by noting that the literature "identifies multiple purposes of participation" (p. 26). In all of this, the planner is being cast, as an actor who can evaluate the technical, political, and social environment and make decisions about the appropriate form that public participation should take.

While there is no doubt that planning staff are highly-trained professionals who exercise considerable sophistication in their calculations of the type of public participation mechanisms to employ, the selection of these mechanisms is not likely to be entirely instrumental, as is acknowledged by even those scholars who emphasize the importance of instrumental factors on the selection of participatory mechanisms (see Moynihan 2003, pp. 180-182). Given that normative factors inform, at least to some extent, the selection of particular types of mechanisms of public participation, Grid-Group Cultural Theory can help scholars generate predictions about which types of planners will select which types of mechanisms. GGCT is also valuable because it is amenable to measurement, can be generalized, and is suited to application in numerous policy domains (Ripberger et al. 2011).

Understanding social relationships as a "way of life" (or, in this research, a "worldview") creates other benefits for an inquiry into the design of public participation practices, since it recognizes that:

> Views of human nature are inextricably tied to social relations. A change in the way an individual perceives human nature, we predict, will be accompanied by a change in the pattern of social relations that an individual can justify to himself and to others. (Thompson et al. 1990, p. 33)

This suggests that the understanding a member of an MPO's planning staff has of the way in which people should participate in a democratic process will contribute to the design of the process. In short, the process will be structured to support (to a greater or lesser extent) a planner's understanding of the proper relationship of the public to the planning process.

A second major contribution of the research presented in this dissertation is to connect Archon Fung's work relating to the structural variation in the construction of mini-publics to the

theoretical insights provided by GGCT. Fung's framework, the *Democracy Cube* (2006), frames the structural characteristics of public participation practices as existing on three dimensions, the *Participant Dimension*, the *Communications and Decision-Making Dimension*, and the *Power & Authority Dimension*. Each of these dimensions is composed of a continuum of possible characteristics for public participation mechanisms. For example, when discussing the *Participant Dimension*, Fung identifies eight possible ways that designers of the process can approach the question of who should participate in the process. The most exclusive end of the continuum is *Expert Administrators*, and includes only those "who staff our public bureaucracies" (2006, p. 68). While the opposite end of the continuum, the *Diffuse Public Sphere/Everyone*, encompasses all citizens being targeted for inclusion in the process (e.g., using websites, television or radio advertising, etc.). In between are levels with varying levels of inclusivity in the makeup of those who are intended to engage in the participatory process.

The two other dimensions also have continua that are constructed in a similar fashion. The *Communication and Decision-Making Dimension* moves from requiring the most time and involvement from its participants (labeled as *Technical Expertise)* to the least required (*Listen as Spectator*). The *Power and Authority Dimension* runs the gamut from *Direct Authority* (indicating that the results of the participation have a binding outcome on the policy that will be adopted) to *Individual Education* (which recognizes only personal benefits to the participation, with no expectation that the results will influence the collective decision). This recognition, when coupled with observations from the literature that suggest that public participation practices have "a readily recognizable format that is routinized across contexts" (Lee 2011, p. 21), makes it possible to draw connections between preferred modes of social relationships and the structure of public participation practices. Further, as Fung's dimensions are numerically

organized across a continuum with eight levels on the *Participants Dimension*, six levels on the *Communication and Decision Making*, and five on the *Power and Authority* dimension, it becomes possible to generate testable hypotheses regarding each of the different types of GGCT worldviews and the preference for particular public participation mechanisms they are likely to hold.

1.2 Why Metropolitan Planning Organizations (MPOs)?

Providing some background on MPOs at this point can assist in understanding why they provide a useful canvas on which to explore the intersection between GGCT and the design of public participation processes. The Federal Highway Act of 1962 required each urbanized area with a population larger than 50,000 persons to create a Metropolitan Planning Organization. MPOs are responsible for coordinating transportation planning in the urbanized areas in which they exist. To achieve this coordination, MPOs can be conceived as carrying out five basic tasks. First, they must create a setting for decision making in the urbanized area. Second, MPOs collect and analyze data that are used to develop and compare alternatives to address the transportation needs of the area they serve. Third, the organizations are required to develop and update a Long-Range Transportation Plan (also called a Metropolitan Transportation Plan) with a planning horizon of no fewer than 20 years. This plan must aim to support the transportation of travellers and freight, identify means to preserve the existing transportation system, and its performance in delivering mobility. The plan must also help support the quality of life in the region. Fourth, the MPO must develop a short-term Transportation Improvement Program (TIP) whose implementation furthers the goals of the LRTP. Finally, these regional planning entities must develop processes and procedures to involve the public (FHWA n.d. p. 4).

There are no federal requirements to determine the organizational structure of MPOs and this has resulted in significant variation in their organizational forms. Gage and McDowell (1995) emphasize the diverse origins of MPOs as entities, showing that some can trace their founding back to the 1950s, while many others are creatures of the 1980s and 1990s and that this variation in lineage leads to very different organizational styles and very different types of problems that each must deal with. The authors emphasize the changing nature of the MPOs by pointing out that while 75 percent of MPOs in the 1970s were under the auspices of regional councils, "only about 44 percent of all MPOs are staffed by regional councils" now (p. 135). However, Lewis and Sprague (1997) suggest that this lack of federal guidance resulted in numerous organizational forms arising to meet different needs at different times and places. The authors identify four separate organizational types. The first organizational type that Lewis and Sprague note is the Council of Government (COG) form, which is "constituted as a cooperative organization of the local governments operating in the area, each of which generally sends one or more delegates to the council, typically a mayor, city council member, or county supervisor" (p. 34-35). The second form that an MPO may assume is that of a freestanding entity "devoted solely to transportation planning. In this type of MPO, members of the governing board may be appointed by local or state elected officials, or they may be delegates as in the COGS" (p. 35). MPOs may be housed within a county government's planning department, especially in smaller areas where the planning boundaries are contained entirely within a single jurisdiction's geographic boundaries. Finally, the MPO may be completely staffed by the State government and exist as "little more than a field office of [State] transportation planners and engineers" (Lewis and Sprague 1997, p. 35). While the organizational form does vary between MPOs, each

is very likely to be composed of a director and staff, a policy or executive board, and a technical advisory committee (FHWA n.d., p. 4).

While the variation in MPO organizational forms is interesting in and of itself, Gerber and Gibson (2009) identify three additional reasons why MPOs are ripe for investigation. First, they are, "a common and important form of regional governance that has received little scholarly attention" (p. 635). Second, MPOs enjoy considerable discretion over the allocation of funds they receive from the federal government. Third, MPOs are sufficiently similar to one another to allow comparison even as their structures are sufficiently varied to allow the testing of explanatory hypotheses. The authors identify four separate types of actors that participate in MPO decision making processes:

> "(1) County and local elected officials appointed by their local governments (typically a county board or city council) to represent their jurisdiction on the MPO; (2) state, county, and local government staff (such as city managers or planning directors) and transportation professionals (typically transportation department staff) who bring land use, engineering, or transportation policy expertise (we use the term "public managers" to refer to this group); (3) nonpolitical appointees, such as residents or representatives of business, labor, or educational organizations; and (4) MPO staff, responsible for the day-to-day operations of the MPO…" (Gerber and Gibson 2009, p. 636).

The place that MPOs occupy in the framework of intergovernmental relations is also intriguing. As MPOs exist as regional planning entities they occupy a contentious geography where conflicting federal, state, and local priorities are often played out. Norris (2001) notes that in this intergovernmental milieu MPOs and other organizations geared toward questions of regional governance and planning are often at a disadvantage vis-à-vis state and local

governments for several reasons, one of which is the lack of constitutional status, meaning that state constitutions provide specifically for the creation of local governments, but not for regional ones. The strength of MPOs as regional planning bodies also is undermined by the manner in which the executive committee is constituted. As Lewis (1998) notes, the prevailing systems of "one government, one vote" in the systems of representation in Metropolitan Planning Organizations often result in the underrepresentation of certain areas. In his analysis of MPOs in California, Lewis found that of 74 survey respondents, 68 were MPOs where the central city's population was underrepresented on the board. This underrepresentation of urban populations seems to have persisted; Sanchez also explored this issue in 2006 and reached similar conclusions regarding the problem. The lack of constitutional status for the MPOs and their disproportionate representation on the policy committee lead to a real need for MPOs to build legitimacy in the eyes of both the public and their member governments. How they design public participation processes for Long Range Transportation Plans thus may affect their success in building that legitimacy.

1.3 Research Questions

The research question that this dissertation seeks to answer emerges from two observations regarding transportation planning in MPOs: first, the recognition by scholars that public participation is essential for transportation planning (Dickey 1975) and second, that federal regulations allow MPOs considerable discretion in choosing their design of public participation processes for their Long Range Transportation Plans. Taken together, we might expect that this would produce reams of scholarship focused on how to design and implement pubic participation programs. Indeed, this is exactly what we see. However, this literature lacks an exploration of the influence of individual planners' political and cultural values on their

preferences for particular approaches to public participation. This paucity of research gives rise to the research question that guides this dissertation project:

> *How does the worldview of MPO planners influence their preferences for public participation mechanisms to incorporate in the design of Long Range Transportation Plans?*

This dissertation explores the relationships between the GGCT worldview of MPO planning staff (used synonymously with planners and administrators) and their public participation mechanism choices. Data was collected through a survey instrument designed to identify the GGCT worldviews of planning staff and to elicit their preferences for specific public participation mechanisms. By analyzing this relationship, this research aims to reveal the extent of the influence basic values and preferences have on the design of public participatory processes in transportation planning.

1.4 Importance of Research

Public participation, when poorly conceived or executed, can have deleterious affects on the relationship between the agency sponsoring the activity and those who participate. Karpowitz and Mansbridge (2005) note that an approach to public participation in Princeton, New Jersey that glossed over differences between participants and overstated the level of agreement in the community "created a process that eventually fueled considerable anger and opposition to the final plan (2005, p. 7). Indeed, Forest (2013) suggests that "If it is the case that sound and truthful participation encourages public ownership of institutions, the opposite might even be truer: bogus engagement fosters alienation and diffidence. In a democracy, as Wildavsky would have insisted, this has deep consequences" (p. 6).

The need to establish legitimacy in the eyes of the public for an agency decision is also important. This desire for conducting a process that is seen by participants as legitimate has often been discussed in the literature on public participation (Carnes et al. 1998; Wang 2001; Mathews 1994; Moynihan 2003), and by tying values and structures for participation together with the theoretical understandings provided by GGCT, this research can give scholars and practitioners another way to think about designing public participation processes that are seen as legitimate by the public (see Ney and Verweij 2014). Additionally, the use of GGCT to understand individual preference formation can help answer Nabatchi and Amsler's call for greater research into the motivations of the conveners of public participation activities (2014, p. 80). As has been recognized, public participation can help to address both the instrumental and normative needs of a community and organization, and GGCT provides a robust existing framework to use in exploring the impact of normative differences on the construction of plans for including the public in agency decision-making.

As Webler (1999) notes, there is a need to appreciate the normative dimension of public participation. He states:

> Prescriptions for the craft of public participation can never be only driven by factual evidence they also take moral stances. For instance, the claim that 'public participation should give participants a meaningful opportunity to influence the decision' begs justification and elaboration. What are the possible reasons for asserting that participants should have influence over the outcome? Is it to ensure the legitimacy of the process? Is it to ensure cooperation with the policy outcome? Is it to empower a local population to shape their own communities? Notice that such a claim may be inconsistent with other democratic norms, for example, why should participants have more say than people who chose not to participate,

but who may be affected by the decision? Once we begin to engage these kinds of issues, we enter into moral discourse. I suggest that such discourse would be productive and helpful for the field of public participation. (Webler 1999, p. 64)

Note the similarity between the language quoted by Webler and the federal regulations guiding the public participation process in MPOs. One benefit of using GGCT as a theory to explore planners' choices among mechanisms, then, is that "in many cases the things (and ideas) that people prefer – from plain food to nuclear energy to weak leadership – can be explained in terms of the consequences these preferences have for their social relationships (Thompson, Ellis, and Wildavsky 1990, p. 56). Since public participation mechanisms seek, in a very real way, to structure social relationships, GGCT provides a valuable lens through which processes of public participation can be viewed to build both positive and normative theory.

1.5 Organization

This dissertation continues with a review of the relevant literature dealing with the design of public participation processes, the impact of planners' views on the selection of participatory mechanisms, Metropolitan Planning Organizations, and Grid-Group Cultural Theory (Chapter 2). Chapter 3 lays out the Research Design and Methodology of the study, complete with a discussion of the development of the survey instrument and description of the variables used in the statistical analyses. The findings from these tests are presented in Chapter 4. The final chapter considers the implications of these findings for the utility of Grid-Group Cultural Theory in exploring the choices of MPO planning staff in the selection of public participation mechanisms. Chapter 5 also details the limitations of the research and offers suggestions for future work.

Chapter 2: Literature Review

2.1 Introduction

This chapter presents the relevant scholarly literature that informs the theoretical foundations of the study. It first discusses the puzzle posed by the federal requirements relating to public participation in metropolitan transportation planning and the lack of an identified approach to formulating public involvement programs. Second, it reviews the literature that highlights the factors planners should consider when designing public participation processes, and how individual planners' views can influence their choices related to public participation. Third, the chapter explores the role of Metropolitan Planning Organizations in the transportation planning process in the United States and explains why MPOs are a particularly fertile area for exploring the influence of planners' worldviews on participation processes. Attention then turns to the importance of developing effective public participation processes and why a better understanding of these processes can yield myriad benefits for agencies and society in general. Finally, the chapter turns to examining Grid-Group Cultural Theory as a theoretical lens and the existing studies that have used it to explore public participation.

2.2 The Puzzle

John Dickey, writing in 1975, suggested that metropolitan transportation planning is geared toward addressing the fundamental question of public good and, in the future, would come to focus more and more on "considerations of equity and citizen involvement in the decisionmaking process" (Dickey 1975, p. 10). Perhaps taking his cue from the increasing public involvement requirements evident at the federal level in the late-1960s (e.g., Federal-Aid Highway Act of 1968 and the National Environmental Policy Act (NEPA) in 1969), Dickey's statements proved prophetic. Federal requirements in subsequent decades compelled Metropolitan Planning

Organizations to involve an increasing number of stakeholders in the transportation planning process. The Americans with Disabilities Act of 1990 (ADA) increased participation requirements for the public in transportation planning. The Intermodal Surface Transportation Equity Act of 1991 (ISTEA) further increased federal requirements, concentrating on "early and continuous involvement" in transportation planning. The 2005 surface transportation bill, known as the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFTETEA-LU) added requirements for MPOs to draft and adopt a Public Involvement Plan (PIP) and to consult with 'interested parties'" (TCRP 2011, p. 9). In addition, Title VI of the Civil Rights Act focused planners' attention on possible disparities in public benefits and burdens generated by transportation systems in the community. Regulations promulgated by the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) in 1993 also addressed requirements for MPO planning products (Hopes, Kramer and Williams, 2006).

This push toward increased involvement in the transportation planning process was undertaken because, "[i]t is necessary for the articulation of goals, especially those that cannot be easily valued in dollars a or quantified. Public participation is required to develop a full range of alternatives that collectively address all goals" (Reinke and Malarkey 1996, p. 72). Taking Dickey's insight a step further, Goetz, Dempsey, and Carlson highlighted "an aggressive public involvement program" (2002, p. 101) as a key determinant in positive evaluations of MPO performance. However, what constitutes an aggressive program proves difficult to pinpoint. Does it mean that organizing public participation in any form, provided it meets the requirements of the law, constitutes "aggressive public involvement"? Certainly not, for many MPOs rely on traditional mechanisms of citizen participation, particularly public hearings and public meetings.

In their exploration of MPO participation practices in Florida, Hopes, Kramer and Williams (2006) found that the public meeting was the single most used public participation technique for involving the public in the development of the Long Range Transportation Plan (LRTP), the Transportation Improvement Program (TIP), and various corridor studies, with 96%, 80%, and 92% of Florida MPOs reporting they used this technique, respectively. Although the law often requires public hearings be held prior to the adoption of MPO plans, myriad problems associated with these events have been documented. Lukensmeyer and Brigham (2002, p. 351) note that "Public hearings and typical town hall meetings are not a meaningful way for citizens to engage in governance," and Kihl suggests, "involvement in hearings is stimulated by a perceived threat to one's personal or business property. Citizens will turn out not to shape plans, but to save front porches" (1985, p. 186). Perhaps King, Feltey, and Susel put it most succinctly: "The most ineffective technique is the public hearing. Public hearings do not work" (1998, p. 323).

This suggests that "aggressive public participation" must encompass processes and procedures that seek to engage the public in ways that differ from simply providing a forum for the public to express complaints and support for articulated plans. Given that more proactive strategies for engaging the public are required, how do planners decide which mechanisms to incorporate into the process?

One aspect of the dilemma public administrators face concerning public participation is the need to understand how best to reach out to groups with the appropriate form of participation. If scholars are in agreement about the importance of an effective process to achieve participation and public hearings and meetings are generally viewed as ineffective, why do planners continue to choose them, and how might planners be coaxed into choosing other mechanisms that might

be more effective in achieving public involvement in the process? A second consideration flows from the fact that scholars of public participation have recognized that the characteristics of various participation mechanisms lead to different public perceptions of legitimacy regarding the process and its outcome (Innes and Booher 2004). While this recognition has been characterized as a binary distinction between "pluralist and participation models" (Innes and Booher 2004, p. 422), the underlying structure of different participation mechanisms can also be viewed (perhaps more profitably) as an expression of the competing political cultures seeking to create "rules specifying proper social relationships" (Swedlow 2006, p. 241). To the extent that the participation mechanism selected conforms to the pattern of social relations viewed as appropriate by a given segment of the population, agency actions will be granted deference. However, if the mechanisms selected for engaging the public fail to include processes that embody the preferred manner of social interaction between the public and the agency, the process and the decisions flowing from its execution are likely to be called into question.

The emphasis on public involvement in transportation planning has prompted significant research on how best to involve the public in planning efforts and, or course, in any discussion of public participation, it is essential to define what is meant by the term. Public participation can be defined as "the involvement of stakeholders in administrative functions and decision making, which is achieved through the availability of participation modes, participation in functions, and participation in the decision-making process." (Wang & Van Wart 2007, p. 268). As such, public participation encompasses a wide variety of techniques each of which has its own particular characteristics. Some are required by law, such as public hearings, others are focused on letting the public know what an agency is doing via websites, newsletters, and direct mailings. This type of participatory practice is focused on informing the public. These participatory mechanisms are

essential for any participation process since at a minimum, the public needs to be made aware that an opportunity for them to provide input is available. The provision of information from the agency to the public is important in other ways above and beyond announcements that a participatory process is underway. This takes the form of providing the public with information about the agency, the project, or plan under development and the manner in which the public can influence the plan or benefit from participation. This is especially important because "participation must be informed to be effective" (Laird 1993, p. 347). Mechanisms that disseminate information to the public include, flyers, posters, newspaper advertisements, websites, and email among others.

Still other mechanisms allow the public to come and share their preferences with administrators, like open houses and focus groups. A more in-depth set of practices aims to bring stakeholders together to engage in deliberation to discover shared concerns and solutions, and as a byproduct increase social capital. As Owens writes, "Rationales for public engagement fall broadly into the two camps…those based on a rationalist, "information deficit" model, and those owing more to a civic, or deliberative ideal" (2000, p. 1141). This second set of mechanisms, characterized by an emphasis on collaboration and shared meaning making, are geared toward achieving a different set of participation goals, namely, the generation of a participation process that is more open, deliberative, and considerate of the public as having a central role in agency decision-making. Examples of mechanisms that take this understanding of public participation as its foundation are intensive planning charettes, planning games, and facilitated meetings.

2.3 Designing Participation Processes

Given the wide array of benefits that scholars have theorized to result from public participation, and the recognition that public hearings, the most frequently used (and legally required)

mechanisms, are generally understood to be ineffective, it is worth examining the extant literature that provides guidance to planners as they develop and implement participation processes. Robbins, Simonsen, and Feldman suggest that "participation methods should be matched against the goals that the government wants to achieve" (2008, p. 568), a view that echoes Thomas's (1995) assertion that public managers should know whether they want either information from the public or public acceptance of agency decisions (p. 171) before they invite the public to participate. Thomas also suggests that managers should define which segment of the public they would like to involve in the decision-making process, because "Focusing on too broad a public can unnecessarily complicate decision making, while over-looking an important group risks later failure if that group mobilizes around the issue" (pp. 172-3).

Bryson et al. identify nine purposes for engaging in public participation and, from these, derive considerations regarding the design of the participation process and the deployment of evaluation criteria: 1) Meeting legal requirements; 2) Pursuing a democratic ideal of inclusion; 3) Moving toward social justice; 4) Transmitting information to the public; 5) Generating potential solutions to problems through increased understanding of public problems; 6) Increasing the quality of public plans; 7) Enlisting support for agency decisions; 8) Dealing with possible uncertainty; and 9) Creating resilience and capacity to solve organizational problems (Bryson, Quick, Slotterback, and Crosby 2013, pp. 25-26). From these overarching purposes, Bryson et al. develop "design guidelines" by which administrators seek to understand the purpose behind their quest to incorporate public participation and, from this, devise the most appropriate approach to garnering public input.

Bryson et al. indicate that the first thing an administrator should assess is "whether participation is needed or possible" (p. 26) and stress that participation should be pursued when it

is the best way to secure "information, political support, legitimacy, or citizenship development" (p. 26). Second, Bryson et al. propose that administrators ask themselves "What are the purposes of this participation process?" (2013, p. 26) because certain mechanisms of participation are more appropriate to achieving specific purposes (or combination of purposes) than are others. Robbins et al. (2008) concur with this, stating, "participation methods should be matched against the goals that the government wants to achieve" (p. 568). The third step is to identify stakeholders and devise appropriate ways to involve them. Other scholars indicate that these stakeholders should be representative of those who are interested in the outcome of the planning decision and also those who will be affected by the project (Bickerstaff and Walker 2005; Carnes et al. 1996; Blahna and Yont-Shepard 1989; Aronoff and Gunter 1994). The fourth step in their design recommendations is the need to establish the legitimacy of the process, to both "internal and external stakeholders" (2013, p. 27) in order to increase the likelihood that the results of the process will be accepted by all concerned (see also, Carnes et al. 1996, p. 392; Beierle and Konisky 2000, p. 591). Fifth, Bryson et al. suggest that planners develop appropriate leadership to guide the process. The importance of leadership is also recognized by Beierle and Konisky (2000) and Grosshardt et al. (2003, pp. 95-96).

The sixth step is to secure adequate resources to support the process that planners have designed, for without the necessary resources the process is unlikely to generate benefits in excess of the costs incurred by the agency in conducting the process. Stewart, Dennis and Ely (1984) and Laird (1993, p. 348) also emphasize access to resources as essential to public participation processes. Seventh, planners are advised to create "Rules about how the process will be managed and how decision making will take place [to] provide a bridge between participation processes and organizational structures" (2013, p. 28). Without such rules, it will be

unclear to participants and planners how the outcome of the participation process will be incorporated into the final product, leading to potential disappointment and disillusionment with the process. Specifying the relationship between public input and its affect on the decision-making process is also an important factor in designing public participation practices, as identified by Pateman (1976) and Lauber & Knuth (1999, p. 23-4).

The eighth design principle put forth by Bryson et al. is that if the planner desires that the process move beyond "simply complying with mandates to promoting participatory democracy" then they need to employ procedures that productively deal with differences of opinion and "invite diverse participation" (2013, p. 29, see also, Ebdon 2006, p. 440). In a related vein, the ninth design principle advises planners to manage power dynamics in a way that achieves "meaningful participation, exchange, and influence on decision outcomes" (2013, p. 29) given that diverse participants are likely to enjoy various levels of social, political, and economic power. Planners are also advised, by design principle ten, to make use of appropriate technologies to achieve meaningful engagement.

The final two principles encourage planners to develop an approach to assessing the effectiveness of the process and ensure that each design principle is aligned in a fashion to achieve "participation goals; participation purposes; types of engagement; promises made to participants; engagement methods, technologies, and techniques; steps; and resources in the process" (Bryson et al. 2013, pp. 30-31).

Grosshardt, Baily, and Brumm echo much of this advice to planners when they state "one of the most significant challenges is to work with relevant coalitions to define cleanly the scope of design and planning issues that are the domain of the public, and how the public should inform the design process of the professionals. Once this domain is established, it becomes easier

to frame clear and meaningful questions that can then be used to solicit genuine public input" (Grosshardt, Bailey, & Brumm 2003, p. 96). Shindler & Neburka suggest that an advisory group "whose purpose is defined and whose end product is identified at the outset is inherently more successful…When groups begin with a jointly identified common focus, their success can be measured by meeting objectives and then reinforced by seeing results of their efforts on the ground" (1997, p. 18).

2.3.1 Benefits of Public Participation

Understanding how best to design and implement public participatory practices is important because of the many benefits that have been identified with public participation. Fiorino (1990) identified two sets of benefits associated with public participation practices: those benefits that are instrumental to the work of the agency and benefits that convey normative benefits to a society that considers itself to be a democratic republic.

Public participation in governmental decision-making has been promoted as a means to achieve eight types of benefits related to organizational goals and objectives. First, of course, is that federal law requires agencies to pursue public participation (Blahna and Yonts-Shepard, 1989; Carnes, et al., 1998; Moynihan, 2003; Innes and Booher, 2004), therefore public participation benefits MPOs as it brings them into compliance with the law. Second, participatory practices can help public agencies respond better to the needs of citizens. Since many of the decisions that are made in public agencies are not necessarily the focus of debate in political campaigns and elections and agency actions can have a substantial impact on the interests of citizens, involving the public can ensure that government can discover and respond to citizen's desires (Plumlee, Starling, and Kramer 1985, p. 456; Moynihan 2003, p. 173; Wang 2001; Neshkova and Guo 2012).

The third instrumental benefit that may accrue to public agencies using well-designed participatory practices is the realization of decreased implementation time (Blahna and Yonts-Shepard 1989). Robbins, Simonsen, and Feldman (2008) also suggest that participation can speed implementation, when they claim "[d]irect citizen participation can minimize delays since representative systems are not as flexible and do not adapt quickly to changing circumstances" (pp. 564-565). A fourth instrumental benefit, closely related to increased implementation speed, is that public participation is thought to reduce the incidence of litigation brought by dissatisfied citizens to stop agencies from pursuing projects that are found to be objectionable (Blahna and Yonts-Shepard 1989; Roberts 1997; Grosshardt, Bailey, and Brumm 2003, p. 96). In addition to the potential resource savings that avoiding litigation may provide for an agency, Sewell and Phillips (1979) found a fifth benefit, that public participation was viewed as a mechanism that could "enhance the efficient performance of agency responsibilities" (p. 352) potentially resulting in decreased program costs. Carnes, et al., (1998) interviewed both external and internal stakeholders in five Department of Energy projects and found that by understanding the concerns of those involved in the environmental management activities they could develop public participation measures that promised to "reduce total program costs for environmental management (p. 386).

A sixth instrumental benefit that public participation processes can achieve for public agencies is resolving conflict among competing interests. Bringing stakeholders into contact with one another and eliciting their preferences regarding public policy decisions may even provide administrators the opportunity to bridge disagreements in contentious planning areas (Twight and Carroll 1983; Beierle and Konisky 2000; Lynn and Busenburg 1995).

A seventh instrumental benefit is that public involvement in agency decision-making can improve the quality of agency planning. Rowe and Frewer argue that there are frequently important limits on "the knowledge of experts, who often disagree among themselves" (2000, p. 5). In light of this disagreement, it is important to understand that the public may have insights that can serve to break the deadlock and improve service outcomes. When one considers the need for public agencies to satisfy the demands of a variety of constituencies, realizing this benefit from participation is no small boon to the organization. Another aspect of this benefit is that public involvement provides decision makers with "comprehensive information" (Kweit and Kweit 1984, p. 238) and that this additional information can allow administrators the benefit of foresight, as they might gauge the public reaction to proposed projects and policies before moving too far down the road to implementation (for further discussion of the impact of participation on improving decisions see, Aronoff and Gunter, 1994; Lynn and Busenburg, 1995; Webler, 1999; Beierle and Konisky, 2000; Wang, 2001; Innes and Booher, 2004).

A final instrumental benefit conferred by public participation is identified by Innes and Booher (2004) who suggest that participation efforts that deploy collaboration "built new professional and personal relationships. They came to understand each other's perspectives and in most cases build considerable trust" (p. 428). This trust building benefit is cited by many scholars of participation as a significant reason to engage in the practice of involving the public in agency decision-making (see, Pateman 1976; Sewell and Phillips 1979; Twight and Carroll 1983; Gariepy 1991; Beierle and Konisky 2000; Moynihan 2003; Wang 2001; Wang and Van Wart 2007; Robbins, Simonsen, and Feldman 2008).

A second set of benefits discussed by Fiorino (1990) suggests that public participation achieves important *normative* goals as it can; 1) help to advance the democratic ideal; 2) promote

the development of public spirit and moral character; and 3) advance justice and fairness (1990, p. 227). A key component to any conception of democratic government is that "there is some form of *political equality* among the people" (Held 1996, p. 1) and while there may be significant disagreement over the precise definition of "equality" or "the people," it is not too difficult to understand that direct citizen participation in the decisions of public agencies can be seen as one method to achieve equality of the people by allowing them to participate on equal footing with other citizens and public servants as well. According to some scholars, a deep commitment to participation can also fulfill more ambitious goals such as compensating for public administration's long-held adherence to a "bureaucratic ethos" (Nabatchi 2010), providing a corrective to an understanding of democratic government that relies too heavily on formal, national-level voting structures (Pateman 1976; Box 1992) or even providing an alternative to the liberal state itself (Barber 2003).

A second normative benefit is that the process of participation can help to fulfill the classical republican ideal of citizenship. As Sandel puts it, the republican approach to citizen interaction with the state aims, "to cultivate in citizens the qualities of character necessary to the common good of self-government…republican politics regards moral character as a public, not merely private, concern" (Sandel 1996, p. 25).

Third, the practice of incorporating the public into agency decision-making is also thought to have a benefit for diversifying decision-making. By providing the public with an opportunity to engage with agency planners and decision-makers, those who are likely to be heavily influenced by a potential agency action gain leverage that can be used to bring pressure on politicians and public servants to consider the point of view of individuals who have been traditionally left out of the political process (Innes and Booher, 2004; Neshkova and Guo, 2012).

A final normative benefit that can be realized through participation by the public is that it can provide an avenue for administrators to educate citizens about the mission, goals, and work performed by a government agency. Irvin and Stansbury state, "[i]nformed and involved citizens become citizen-experts, understanding technically difficult situations and seeing holistic, communitywide solutions" (2004, 56). This ability to understand difficult situations transcends questions associated with the substantive issue at hand and extends to the difficulties associated with the very operation of the government agency itself.

2.4 How Planners' Views May Affect Their Selection of Mechanisms

The question of how planners' values influenced aspects of the public participation program has been explored in various ways. For instance, a recent case study of four individual planners engaged in planning around works of public art and found that:

> The intensity of planning subjects' role varies according to the worth that the planner placed on their potential contributions: the planners who believed participants to be competent used participatory strategies that deepened their responsibility for the project. At the same time, each planner believed that public participation is essential to his or her work and provides expertly for public engagement in planning (Carp 2004, p. 243).

McGovern (2013), in another case study approach to the effect that the outlook of administrators may have on the types and level of public participation, explores the reticence of the City of Philadelphia toward engaging in public participation in the redevelopment of the waterfront. He noted that this reluctance can be traced to the financial costs associated with participation but, more importantly for this study, to "reservations about the wisdom of delegating too much power to ordinary citizens" (2013, p. 311). This result indicated that city

officials approach the question of participation with a viewpoint that sought to place the public in their "proper" relation to administrators and elected officials.

Additionally, Tait (2011), in a case study of local planning organizations in the UK, suggested that trust plays a major role in the efficacy of public participation in planning decisions and that a lack of faith in organizational processes might "reside in broader, often explicitly political debates that occur in the wider culture about the idea and place of government within contemporary society" (Tait 2011, p. 158). Tait found:

> Ensuring the legitimacy of these public institutions requires not only a widespread "belief that they are a rightful source of authority but also a belief as to the ends and purposes that they should serve" (Beetham 1993, 489). Therefore, building trust in the *collective values and ideas* underpinning institutions such as public planning, and in a coherent and persuasive definition of the "public interest" that it serves, becomes a critical task. (Tait 2011, p. 169)

Moving away from empirical studies to wider theoretical work on the issue of administrator's values on participation, Roy (2001) identified four paradigms that compete in planning situations to define "the public." First, she cites the influence of utilitarian approaches to planning, which "see the public interest as an 'invisible hand' aggregation of individual interests, a mirror image of self-adjusting neoliberal markets" (p. 111). Second, she emphasizes the influence of Rawls on the conception of the public in planning practice, by noting that certain rights should not be limited by a utilitarian calculus, and that understanding what constitutes a just practice is predicated on a system where "the prospects of the least fortunate are as great as they can be" (Rawls 1973, p. 328, cited in Roy 2001, p. 112). A third conception of the public that pervades the practices of planners, she argues, is based in communitarian thought, where the

planner acts as a 'participant' whose role is realized in "spanning the boundaries of various 'moral communities' and their rules of conduct (Bolan 1985, p. 82, cited in Roy 2001, p. 112). Finally, Roy points to the influence of Habermas' "ideal speech condition" and its conception of the public being "conceived as a discursive process in which all relevant subjects can participate" (Dryzek 1990, 41, cited in Roy 2001, p. 113). Roy notes that each of these approaches suffers from an inability to recognize that the idea of the public "is not a concept with universal and timeless connotations but rather one that is ascribed specific meaning in the crucible of given historical moments" (2001, p. 116).

Baum (1983), surveying this literature which asks planners how they think of the political aspect of their role in the planning process, finds three forms of self-perceptions: their "cognitive maps" (how they think politically); their "role orientations to the planning environment" (whether they are political or not); and their daily skills (some being political). The evidence he reviews, and others noted earlier, suggest three types of planners. A large minority of planners who approach their work as an explicitly political act while a second group of planners function in a wholly technical capacity avoiding political action and thought. A final group of planners were more likely to think about the political implications of their work than they were to put view their work as a conscious political action (cited in Wirt and Christovich 1984, p. 94).

Abram (2000) cites Douglas on the importance and (at times) invisibility of worldviews (what Douglas calls "institutions"), "the significant feature of most collective thought is that it remains latent, or implicit, often manifesting itself only in the existence of particular customs, practices, and rituals. In other words, we rarely recognize the institutions that form the foundation of our belief in the rightness of a particular way of doing things" (p. 353). Abram asserts that, "The institution of planning refers both to the thought-world occupied by those in

the planning profession, and to the collection of policies, procedures, and practices that make up what is commonly known as 'the planning system'…" (2000, p. 353). Abram goes on to say, "Like most forms of organized, implemented knowledge, the planning system is a collection of activities that translates the planning thought-world into practices" (2000, p. 353). Abram suggests that many of the failures of public participation in planning efforts "lie not only in the type of planning practiced… but in the different concepts of planning and futures held by the various participants. We can also understand this by thinking about the relations between the participants, in terms of their adhesion to roles and fears over legitimacy" (Abram 2000, p. 355).

The literature on public participation in agency decision making seems to rely on the administrators' ability to make clear distinctions on how the public should be seen as contributing to the process (Grosshardt, Baily and Brumm 1997), the need for participation (Bryson et al. 2013), the need for either public acceptance or public input (or both) into the process (Thomas 1995), and the appropriate match between the participation and the goal of the government agency (Robbins, Simonsen, and Feldman 2008). All this suggests that the planner's understanding of the appropriate relationship between the planning organization and the public is of the utmost importance. However, this relationship seems to be underexplored in the literature on MPOs and their approach to public participation.

The lack of emphasis on understanding "how" planners understand the role of the public in the participation process can be seen by surveying how "effective" participatory practices are conceived by the literature. For instance, MacNair, Caldwell and Pollane (1983, pp. 513-517) indicate that a public participation process should possess six criteria: first, the intended role for citizens; second, a sufficient allocation of resources; third, the selection of an independent membership (i.e., the participants should not feel bound to the "official" line); fourth, the level of

their involvement in the decision-making process; fifth, the frequency with which official meetings were held (with more being viewed as more desirable); and finally, the ability of participants to access higher authorities (reporting to those in positions authorized to make binding decisions, not simply staff members conducting the participatory process). Similarly, Tuler and Webler (1999) identify seven components of effective participation: 1) access to the process; 2) the power to influence processes and outcomes; 3) access to information; 4) a structure that promotes constructive interactions; 5) a process that facilitates constructive personal behavior; 6) access to adequate analysis of the problem and potential solutions; 7) the social conditions necessary for future processes (1999, p. 442). In a similar vein, Poisner (1996) suggests that effective participatory practices have access to a process that: 1) encourages dialogue; 2) focuses on the development of the "common good"; 3) engenders critical reflection upon the values underlying a proposal; 4) inculcates citizen virtue; 5) is based on face-to-face communication; 6) involves real citizens, not paid representatives; and, 7) enfranchises members from all segments of the community (1996, pp. 63-64).

These prescriptive formulas for effective participation call on the planner to assess the planning environment and deploy participatory mechanisms that are best suited to the situation (Plumlee, Starling and Kramer 1985, p. 469). However, Innes and Gruber (2001, 2005) found that administrators at the Metropolitan Transportation Commission (San Francisco's MPO) possessed one of four different "planning styles," which are characterized by "different assumptions about information, public participation, and what a good plan looks like, as well as about the process of planning" (2005, p. 177). Interested in exploring how to conduct a collaborative transportation planning process, they identified four different approaches to regional transportation planning. First, they identified the "technical/bureaucratic" style of

planning. This style was defined as an approach where there existed, "a unitary decision maker and where different players and interests are not highly interdependent…It does not deal well with conflicting goals or rapid change" (Innes and Gruber 2001, p. 7). They then identified the "political influence" style of planning, which accommodates, "a broad diversity of players with differing objectives, but does not deal well with the potential interdependence of players because it normally involves one influential agency or patron that players work with individually to get what they have already determined they want. It typically does not allow the development of solutions that only can be discovered through the interaction of players" (p. 7). The third planning style, the "social movement" style, incorporates "some interdependence among participants as groups and individuals join together to have an impact on the process and to promote a common agenda. They typically however are not highly diverse. Many interests and players are left out by the very nature of social movements which require focus to be effective" (p. 7). Finally, the "collaborative" style of planning, "works best when there are diverse but interdependent interests" (2001, p. 7).

These styles suggest that planners' in MPOs have a particular orientation to the role they play in the planning process and, by extension; the role the public should play in the planning process. Innes and Gruber suggest that the technical/bureaucratic approach to the planning process can best be understood by conceiving the role of the planner as "*convincing* people with analyses to show what the right action is" (p. 7). The political style of planning can be seen as coopting the players, getting buy-in to assure a plan or program will have support and that the leader will have the power to influence players at all levels because of this support (p. 8). The social movement style is about "converting others to one's way of thinking, to the movement's

vision." While the collaborative style is about "coevolving as participants identity their reciprocity and interdependence…" (p. 8).

These planning styles indicate that planners' have a particular "point of view" regarding the planning process that would influence the selection of public participation practices because the method of justifying the decisions being made would rest on different types of logic. Moreover, the rationale behind the selection of particular transportation plans (and the projects they contain) is based on different standards of evidence. For example, planners who subscribe to a technical/bureaucratic approach and their interest in convincing people that their take on the problem is correct would be likely to value public input that can be converted into more information for modeling and analysis. While political-oriented decision makers would be more attuned to the wishes and desires of highly connected and influential groups and individuals in the planning process.

Innes and Gruber's observation, while important, is difficult to translate into broader application because their typological categorization lacks testing in social science research outside of their case study. However, the fundamental finding that different approaches to planning exist in the transportation-planning environment in which MPOs make their decisions may yield interesting findings when anchored in a more developed framework of values and social relationships. To accomplish this investigation, this dissertation turns to Grid-Group Cultural Theory (GGCT), as a means to capture value competition in the planning environment.

2.5 Grid-Group Cultural Theory

Grid-Group Cultural theory builds on the work of anthropologist Mary Douglas (1982). GGCT focuses on linking differences in preferences surrounding values and forms of social relationships with variations in organizational structures which draw on these differences

(Thompson et al. 1990).Since federal regulations dictate only a few minimal requirements concerning what an MPO's participation processes must contain, coupled with the literature's dominant approach to designing processes emphasizing practitioner sensitivity to a wide swath of contextual factors (Rowe and Frewer 2004, 2005; Bryson et al. 2013), it seems logical to conclude that MPO planners are able to exercise a considerable amount of control over the types of participation mechanisms they select.

The internal logic of any particular process they establish will reflect structured social relationships that can be illuminated by applying a Grid-Group Cultural Theory lens. Specifically, Grid-Group Cultural Theory theorizes that there are two dimensions of social organization, "grid" and "group." Grid refers to "the degree to which our lives are circumscribed by conventions or rules, reducing the area of life that is open to individual negotiation" (Hood 1998, p. 8; see also Altman and Baruch 1998, pp. 771-772). Group, meanwhile, "denotes the extent to which individual choice is constrained by group choice, by binding the individual into a collective body" (Hood 1998, p. 8; see also Altman and Baruch 1998, p. 771). Combining these two dimension creates a typology of individual "ways of life" that have been labeled: 1) Hierarchist, or high-grid, high-group; 2) Fatalist, high-grid, low-group; 3) Egalitarian, characterized as low-grid, high-group, and; 4) Individualist, low-grid, low-group. Grid-Group Cultural Theory can help provide insight into the "available range of viable models of organization…" (Hood 1998, p. 7, see also Coyle and Wildavsky 1987, p. 4; Stenvoll 2002, p. 290) when dealing with public organizations. As Swedlow suggests, "the social and political relations of the four ways of life specified by GGCT are simultaneously specifications of four ways of making decisions, constituting authority, and exercising power" (Swedlow 2011a, p. 705).

This dissertation will apply this insight by extending it to the role of the public administrator as planner in designing public participation processes. As such, individuals who identify with hierarchist worldview are more likely to prefer participation processes that "are socially coherent and operate according to well-understood rules of procedure" (Hood 1998, p. 9). While those of an egalitarian bent are likely to view legitimate practices as those that demonstrate "rules of the game are constantly 'in play,' giving rise to continuous debate about how individual cases or issues are to be handled" (Hood 1998, pp. 9-10).

Planners with an individualist worldview, on the other hand, are more apt to favor mechanisms geared toward "handling every transaction by trading or negotiation rather than by preset rules" (Hood 1998, p. 10). Finally, those with a more fatalistic orientation will choose processes "where co-operation is rejected, distrust widespread, and apathy reigns…" (Hood 1998, p. 9). It is vitally important to keep in mind that the planner is only one participant in any participation process, albeit a very important actor. The mechanisms selected by for inclusion in the plan will, in the end, be responsible for mediating the relationship between the agency and the members of the public targeted for inclusion. This insight is essential, because if certain participation mechanisms are, in fact, viewed to be more legitimate expressions of appropriate forms of social relations to certain GGCT worldviews than others, then the selection of a set of participation mechanisms that privileges one orientation should create a public participation process that is viewed as illegitimate by members of other orientations.

It is important to recall that a key aspect of any public participation program is that stakeholders view the process as being legitimate (Carnes, et al. 1998, p. 392; Bryson et al. 2013) and if a particular mechanism enshrines a set of relationships between agency and participants

that is in conflict with the GGCT orientations of a large swath of the public, the outcome of such a process is likely to fail to secure the necessary approval of the community.

2.5.1 GGCT as Heuristic

Mamadouh (1999) points out that GGCT exists in two forms. The first is the "soft" form, which can best be thought of as a heuristic used to interpret and organize different preferences for particular types of social relationships. This strain of GGCT makes several claims. The first is that "culture matters" and that all actions in which human beings engage are biased by this culture. Second, GGCT asserts that cultural types are not unlimited and it is possible to identify a relatively fixed number of viable worldviews. Third, each of the viable ways of life exists (in varying proportions) in every human society (Mamadouh 1999, p. 397). Examples of studies that employed GGCT as a heuristic device include Coyle & Wildavsky (1987), which investigated the need to align existing cultural biases in order to successfully organize competing cultural worldviews to achieve radical policy reforms. Another example is Stenvoll's (2002) exploration of the support and opposition of existing political parties in Norway to abortion in the face of new genetic testing technologies. Finally, Ellis and Wildavsky (1990) sought to "construct an interpretation of the origins of the Civil War that recognizes the importance of abolitionism without denying the gulf in social relations that separated North and South" (Ellis and Wildavsky 1990, p. 91) by tracing the cultural divisions in the abolitionist movement.

2.5.2 GGCT as Full Explanatory Theory

The second version of GGCT, as identified by Mamadouh (1999) is Grid-Group Cultural Theory as a full explanatory theory. This take on GGCT was pioneered by Thompson, Ellis, and Wildavsky (1990) and it contains several more assumptions than does the "soft" version of the theory. One additional proposition that the full explanatory theory approach adds to GGCT is the

"compatibility condition." This condition maintains that patterns of social relations and common beliefs and values must support one another and cannot combine in patterns that contradict one another. Mamadouh asserts that this proposition means that the full explanatory version of GGCT understands that cultural worldviews are composed of a consistent pattern of preferences. This means that these preferences are reflected by forms of social relations that validate these values and that the values reinforce the desirability of particular forms of social relations.

To provide an example, individualists who Thompson, Ellis and Wildavsky assert view human nature as "essentially self-seeking" (1990, pp. 34-45) would support market-based solutions to problems because this form of arranging social life allows for minimizing control from either rule-making political bodies (i.e. markets are low "grid") and reduced control from the decisions of cohesive groups of individuals (i.e. markets are low "group"). In addition, markets support other views held by individualists.

For instance, we can look at how individualists approach questions of economic growth, the nature of the environment and risk. Individualists value increasing economic exchange and interaction as they believe that it will increase the overall wealth available to both society and themselves (Thompson, Ellis, and Wildavsky 1990). Individualists look at the environment as robust and forgiving, a natural cornucopia that can easily accommodate virtually unlimited human appropriation of natural resources for increased economic activity. Finally, individualists look at "risk as an opportunity" (Thompson, Ellis, and Wildavsky 1990, p. 63) that supports the idea that entrepreneurs should be admired and that those who fail to prosper have only themselves to blame. This brief sketch should provide the reader with a better understanding of how the values of individualists (support market-based social relations which provide a framework for these values to play themselves out. From the other direction, when market-based

solutions result in positive outcomes (plentiful and affordable goods, technological advances, a rising standard of living, etc.) then individualists are likely to point to the system of social relations (i.e., the market) as a good that helps to develop and instill their preferred values in others. In this way, the individualist worldview is both consistent and coherent (Mamadouh 1999, p. 397).

To approach the relationship from another direction, consider the question of economic growth. As Adam Smith outlines in the classic work, *The Wealth of Nations*, the division of labor allows increased specialization of each individual resulting in increased productive capacity. Smith uses the example of a pin-factory, where individuals produce much more because of their focus on a single aspect of the production process. This increase in a specialized output is coupled with a system of social relations that emphasizes exchange (e.g., the market) which gives rise to social differences between people. As Smith notes, "without the disposition to truck, barter, and exchange, every man must have procured to himself every necessity and conveniency of life which he wanted. All must have had the same duties to perform, and the same work to do, and there could have been no such difference of employment as could alone give occasion to any great difference of talents" (Smith 1904). In short, social relations of this type are the antithetical to egalitarian values because the very process of production and distribution leads to the development of and emphasis on individual differences that egalitarians abhor.

The second proposition of the "hard" version of GGCT, is the "impossibility theorem" the idea that there are only five ways of life that are viable "hierarchy, egalitarianism, fatalism, individualism, and autonomy" (Thompson, Ellis, and Wildavsky 1990, p. 3) .[1] This means that scholars, who subscribe to this view, hold that the "grid" and "group" dimensions create an

[1] Autonomy (the "hermit") is not dealt with in this dissertation, as it entails an individual choosing to withdraw from social relationships. As such, it is not a way of life that is likely to be available to planners who wish to keep their jobs for very long.

exhaustive framework for describing varieties of cultural worldview (but see van Heffen and Klok 2003, who argue for a sixth worldview).

Third, the "requisite variety condition" argues that each of the worldviews needs the others to exist for several reasons. First, each worldview misses key insights into issues that are recognized by one (or several) of the other worldviews. For example Douglas and Wildavsky in their study on the rising prominence of environmental concerns in the 1980s, *Risk and Culture*, note that the egalitarian views toward risk and nature call attention to the ecological damage that is done by human industrial activities and calls for "government to impose restrictive regulations" (1982, p. 172), an insight that is antithetical to individualist conceptions of appropriate social relations. Second, each worldview needs the other GGCT orientations to solidify their own cultural boundaries. For example, adherents of the individualist worldview can point to the catastrophic results of hierarchical totalitarian regimes in the 1930s and 1940s as a validation of their emphasis on the individual.

Finally, GGCT also articulates a theory of change, whereby individuals are confronted by events that contradict what their currently held GGCT worldview leads them to expect, and the cumulative effect of these "surprises" can lead individuals to adopt a different worldview (Thompson, Ellis, and Wildavsky 1990).

2.5.3 GGCT and Public Participation Studies

Applying GGCT to the question of public participation is not an entirely novel idea. For example, Docter, Street, Braunack-Mayer, and van der Wilt (2011) use GGCT to examine the public assessment of the appropriateness of Australian health authorities' planned response to a viral influenza pandemic. Using qualitative data derived from transcripts of a deliberative forum,

Docter et al. noted that each worldview is associated with a particular approach to organizing public activity.

Pokorny & Schanz (2003), in a pilot study in the Amazon, sought to use GGCT to characterize stakeholders in a forest management initiative where a relationship between GGCT worldview and "perceptions of sustainable forest management was observed" (p. 887). Using questionnaires, interviews and participant observation of local government officials, scientists, union members, farmers, and teachers, Pokorny and Schanz sought to explore the link between GGCT worldviews and ranked preferences for specific types of forest management arrangements. These forest management policies were characterized by several different questions, the most pertinent here related to the key aspect of use of forest resources and the role that management institutions should play in the administration of the forest. Pokorny and Schanz suggested that hierarchists would favor forest uses that "ensure that the exploitation activities are under control" and institutional roles that emphasized "management and control" (p. 897). Egalitarians would endorse uses that "ensure that future generations can also use the forest," with institutions that focused on coordinating between social groups. Individualists would "ensure that the forest attributes are used effectively" (p. 897) and would espouse a role for institutions that sought to improve the utilization of the natural resources provided by the forest. The results of the study found that the GGCT orientations to sustainable forestry solutions and practices were associated with the expectations derived from cultural theory. However, the relationship was weak (p. 904). They also noted that education and professional experience influenced the selection of preferences toward particular institutional arrangements, (p. 906-907) and that future studies should be sure to consider these variables.

Hoogstra-Klein, Permadi, Yasmi (2012) explored the use of GGCT worldviews to help categorize stakeholder responses to forestry issues in Indonesia. They utilized a survey questionnaire to collect data from 62 respondents (7 NGOs, 16 from the state forest service, 18 from local forest service employees, and 21 from local community members) (Hoogstra-Klein et al. 2012, p. 102) to ascertain respondents' worldviews and their preferences for four different types of solutions to ten well-known forest management problems. Using *k*-cluster analysis to create groups of similar respondents, which were then subjected to a test of similar responses to perceived problems using Kendall's coefficient of concordance, they found that the clustered agreement about specific policies was "weak to moderate" (p. 103).

Trousset, Gupta, Jenkins-Smith, Silva and Herron (2015) use GGCT to explore the willingness of individuals to participate in public participation activities in the siting of nuclear waste facilities in the United States. The goal of the study was to better understand "the connection between the structure and content of an individual's underlying belief system and their decisions to participate in political processes" (p. 46). The researchers suggest that GGCT is a valuable theory to apply to questions of public participation since it can "characterize individuals based on how they value group participation and what they think about power inequalities, justice, fairness, and trust attributes that are the focus of several studies examining different public engagement mechanisms" (2015, p. 50). They argue that, when it comes to views related to public participation, hierarchists are likely to "place trust in experts to make decisions in support of the welfare of group and believe that individuals should comply with what those in authority have determined is best for the group" (p. 51). Egalitarians, by contrast, are more likely to "have a preference for diversity and inclusiveness, and advocate for participatory decision making" (p. 51). Of those two worldviews with low-group dimensions, the individualist is likely

to participate less enthusiastically in group processes, however they may do so more energetically when "they perceive threats to market relationships" (p. 51). Finally, fatalists are far less likely than any others to "participate in social processes and collective decision making" (p. 51). The authors go on to hypothesize that egalitarians and hierarchs are more likely to participate in collective decision making, while individuals and fatalists are less likely to do so. Using a nationwide survey of 1,995 respondents, they asked how likely individuals were to participate in eight different participatory activities: attending an informational meeting convened by authorities; contacting their elected representatives in writing or by phone; using social media to express an opinion; serving on a citizen committee; organizing public support; organizing public opposition; and speaking at a locally held public hearing (Trousset et al. 2015, p. 53). Using OLS regression and controlling for socioeconomic factors, and other demographic characteristics, they found statistically significant correlations (at the $p < 0.001$ level) for reported likelihood of participating and engagement for egalitarians (0.062), hierarchists (0.043) and fatalists (-0.072). An individualist worldview did not demonstrate a relationship with a willingness to participate in public engagement in the citing of nuclear waste storage facilities. These findings indicate that cultural worldviews play a role in "the inclination of individuals to want to engage in the policy process" (p. 61). They conclude that these findings suggest that future research should investigate the impact of GGCT worldviews on "what it means for the design and implementation of an effective public engagement program" (2015, p. 63).

The extant literature on GGCT and public participation seems to suggest that there is a relationship between an individual's worldview and her or his preference for both particular solutions to policy problems and likelihood to participate in collective decision-making. However, a missing component in this research is the role of the administrator in designing

public participation approaches and how their worldviews may work to yield a program of participatory activities with a particular orientation.

2.5.4 GGCT and the Structure of Social Relations in Participatory Mechanisms

To illustrate this point, it is worth considering again the public hearing, a particular participation mechanism that is widely used (and legally mandated). The characteristics of a public hearing are quite amenable to those who hold the hierarchist GGCT orientation. For instance, Chai, Dorj, Hampton and Liu (2011) find that respondents who indicate high levels of agreement with the statements that, "government should take more responsibility" and "people have to follow/obey instructions" (p. 741) are "high-grid" and "high-group," or hierarchists. Looking at the structure of public hearings, with their strict rules about how long one might speak, the very structured place for public comment, and the deference to public officials implied in the format, we can see that public hearings are likely acceptable to hierarchists. The mechanism itself reflects their view of an appropriately structured participation process. The officials maintain control, roles are highly differentiated, and strict decorum is expected and enforced. This mechanism is, however, unlikely to be viewed as legitimate by either individualists or egalitarians.

For individualists, the rules regarding speaking and the need to address comments only to the officials is likely to prevent them from engaging in bargaining and negotiating behavior that characterizes their preferred method of participating. If they can't find the best deal by engaging in discussion with others, they won't find the process to be legitimate. Instead, the process is likely to be seen as a waste of time where they can't find mutually advantageous solutions to their problems.

Egalitarians are just as likely to find the process unsatisfactory, too, but for different reasons. The reliance of public hearings on a privileged position for elected officials and public

servants is likely to incite derision, as egalitarians dislike the trappings of official positions and the differentiation of participants. The inability to engage in lengthy deliberation with other members of the public and the decision makers is likely to strike egalitarians as oppressive and demeaning, leading them to discount the legitimacy of the exercise itself. Without the ability to contribute to the problem definition and solution as equals with agency staff and elected officials, egalitarians are unlikely to support any decision flowing from the process.

These illustrations suggest that a planner's choice of participation mechanism takes into account not only the factors that the traditional model emphasizes, but her own GGCT might have an impact on the mechanisms chosen as well. It is important for the reader to keep in mind that, for GGCT, "institutions are seen as manifestations of social and political relations or orders, which are one aspect of political culture. The other aspect is cultural bias, or political values and beliefs about human nature, the environment, and economics, among other things" (Swedlow 2011, p. 703). Taking this view, participatory mechanisms can be understood to be a particular "manifestation of social and political relations or orders," which may vary depending on the planner's view regarding the desirability of a given structural approach to the social relations between the MPO and the public. Specific hypothesized relationships will be discussed in Chapter 3; however, suffice it to say that given a planner's particular GGCT worldview, (for sake of exposition, say it is individualist), will result in preference for certain mechanisms of public participation over others, maybe distributing an internet survey over undertaking a Sociocultural Effects Analysis. Unless checked (by either self-awareness, other planning staff with dissimilar GGCT worldviews, or organizational pressures) we might expect that a planner might systematically avoid a particular type (or types) of participation. This would tend to make

the existing public participation program less attractive to members of the public who held GGCT worldviews not favored by the planner.

2.6 Conceptual Framework

The advice to planners found in the literature on selecting appropriate participation mechanisms, conceives of the planner as an expert who can weigh agency needs for a given project and arrive at an appropriate form of public participation that elicits the desired input. However, despite identical legal requirements MPOs are employing participation approaches that are radically different. Why might this be? What are the factors that influence administrators in their decision to deploy, say a Speakers Bureau over Focus Groups? Or the use of a mobile Kiosk to administer a survey instead of an interactive website? Although there are many articles that attempt to identify what makes a given participation method or program effective (MacNair, Caldewell, and Pollane 1983; Blanha and Yonts-Shepard 1989; Bickerstaff and Walker 2005; Carnes et al. 1998; Aronoff and Gunter 1994; Beierle and Konisky 2000; Nabatchi 2010; Fiorino 1990; Wiedemann and Femers 1993; Sewell and Phillips 1979; Rowe and Frewer 2000, 2004; Rosener 1978; Heikkila and Isett 2007; Grossardt, Bailey, and Brumm 2003; Shindler and Neburka 1997; Tuler and Webler 1999; Chess and Purcell 1999; Renn et al. 1993; Poisner 1996; Halvorsen 2001; Petts 1995; Lynn and Busenberg 1995; Lauber and Knuth 1999; Mathews 1994; Moore 1996; Ebdon and Franklin 2006), I have been unable to locate any literature that explores the effect of planners' cultural worldview on their decisions to employ a particular mechanism over others when developing a public participation process.

This dissertation maintains that the specific GGCT worldview of planners influences the types of participation mechanisms that they are likely to choose because culture affects their

view of the appropriate role for the public in agency decision making. This view, coupled with the fact that certain participation mechanisms are more costly, time consuming, and involved than others, suggests that understanding the worldview of the planner charged with developing a public participation process is likely to shed light on the types of mechanisms selected (see Figure 1).

Figure 1 – Grid-Group Cultural Theory Model of Participation Mechanism Selection

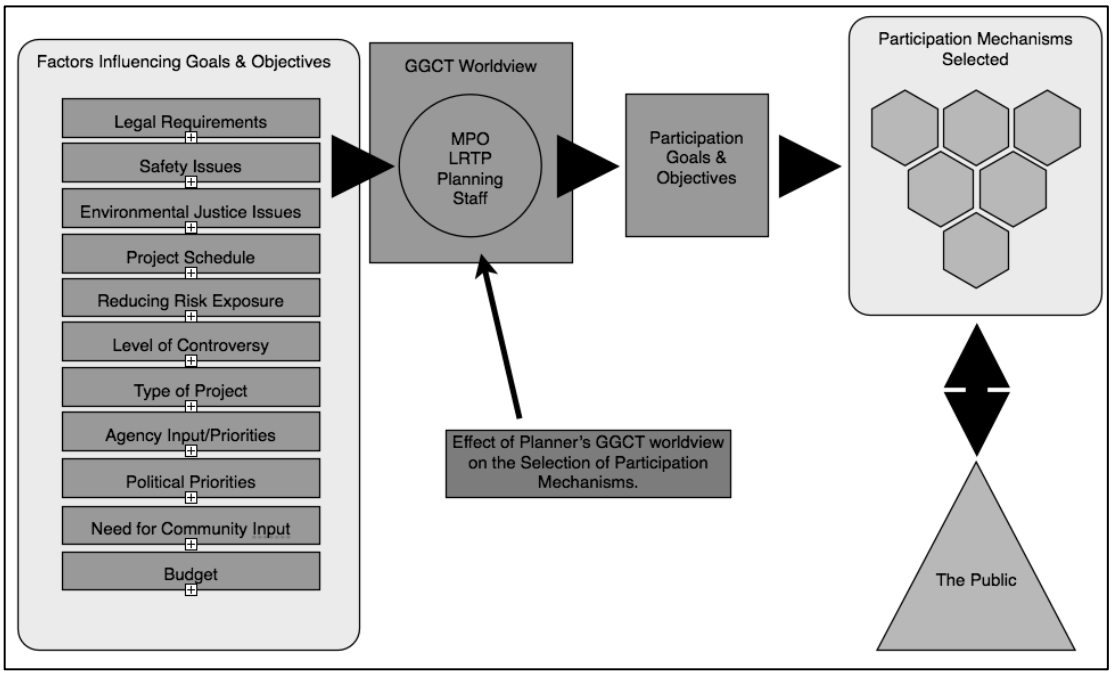


Figure 1 depicts the conceptual relationships between the factors traditionally understood to inform the design and implementation of public participation mechanisms and the role that GGCT worldviews might play in their selection. The planning staff of the MPO each possesses a particular GGCT worldview. According to Grid-Group Cultural Theory, this worldview results in a particular understanding about the desirability of a particular set of social relationships in society. Given this, it seems justifiable to theorize that planners with different worldviews will select mechanisms that are structured to achieve particular aims. Fung's (2006) delineation of the structural characteristics of participatory mechanisms allows for hypotheses to be generated

relating to the impact of a planner's GGCT worldview on selection of a specific mechanism. This mechanism, in turn, is used to create the relationship between the agency deploying it and the public. By understanding the potential impact of variations in the GGCT worldview among planners, it may be possible to expand the ability of scholars and practitioners to make better predictions about the type of mechanisms that are preferred (and thus deployed) by planning staff.

To advance our understanding of the factors that influence the selection of participation mechanisms, I employ Grid-Group Cultural Theory (GGCT), as adapted for application to public administration and management by Aaron Wildavsky (2006) and Christopher Hood (1998). Grid-Group Cultural Theory coupled with Archon Fung's Democracy Cube (2006, discussed below) provide the basis to identify both a possible explanation as to why planners choose certain methods and, by extension, a better understanding of how to develop a package of mechanisms that can span GGCT worldviews and better match participation processes to the predilections of various publics.

This relationship will be relied upon by this study to identify the GGCT worldview of planning staff through a series of survey questions. However, although I have provided one possible example of the pitfalls of not considering GGCTCT worldview in designing participation processes, before moving on to discuss this study's methodology, it will be essential to strengthen the argument that certain participation mechanisms contain within their very structure a bias toward one or another GGCT worldview. In the following section, I detail how each GGCT worldview can be reflected in particular types of participation mechanisms. I enlist Archon Fung's concept of a Democracy Cube, to visualize the characteristics of specific participation mechanisms.

2.6.1 Fung's Democracy Cube

Fung's "Democracy Cube" is an approach to mapping public participation strategies along three dimensions. "These three dimensions – scope of participation, mode of communication and decision, and extent of authority constitute a space in which any particular mechanism of public decision can be located" (Fung, 2006, p. 66).

Fung's first dimension concerns the selection of participants, for example, a public meeting or a Citizen's Advisory Committee (CAC). In the public meeting approach to participation, the opportunity is *open with self-selection*, while the members of the CAC are likely to be appointed by political authorities or selected by administrators from a pool of applicants. The two different methods are not likely to be equally legitimate in the eyes of those with different GGCT worldviews.

Fung also notes that participatory practices may rely on *lay stakeholders* or "unpaid citizens who have a deep interest in some public concern and are thus willing to invest substantial time and energy to represent and serve those who have similar interests or perspectives but choose not to participate" (2006, p. 68).

Figure 2 - Fung's 'Democracy Cube' (Adapted from Fung 2006, p. 71)

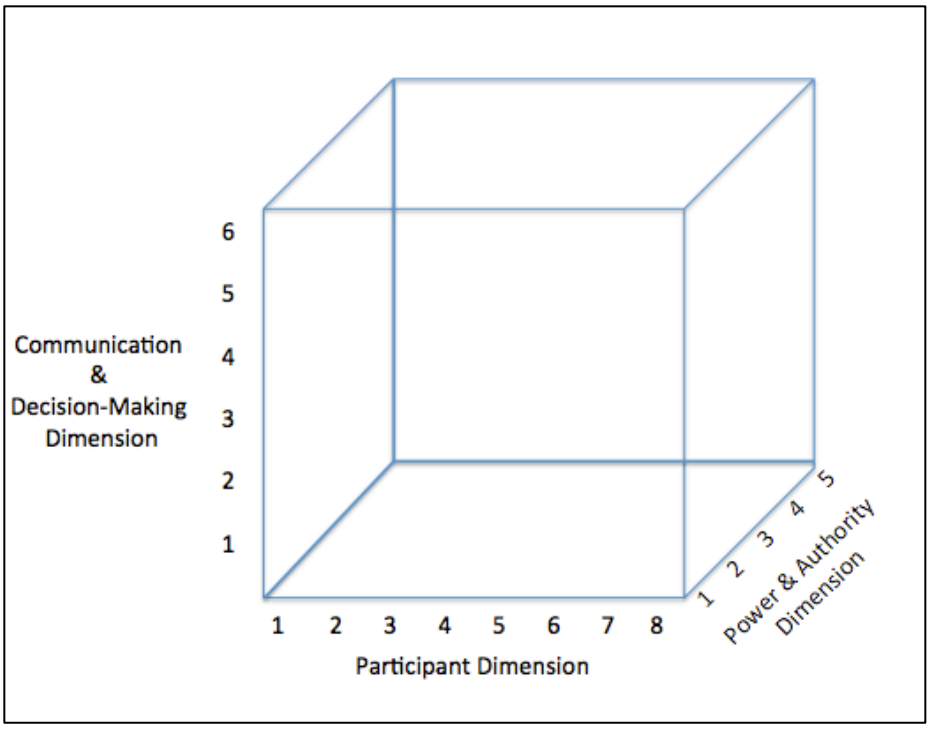


Table 2 - Dimensions of the Democracy Cube

Participant Dimension
1 – Expert Administrators
2 – Professional Representatives
3 – Professional Stakeholders
4 – Lay Stakeholders
5 – Randomly Selected
6 – Open with Targeted Recruitment
7 – Open, Self-Selected
8 – Diffuse Public Sphere/Everyone
Communication & Decision Making Dimension
1 – Technical Expertise
2 – Deliberate and Negotiate
3 – Aggregate and Bargain
4 – Develop Preferences
5 – Express Preferences
6 – Listen as Spectator
Authority and Power Dimension
1- Direct Authority
2 – Co-Govern
3 – Advise/Consult
4 – Communicative Influence
5 – Individual Education

This type of participation might be shown in committees set up by MPOs to address a particular interest, Bicycle and Pedestrian committees, for example. Another answer a planner may provide to the question of who participates focuses on *random selection* to decide who will take part in the process. This approach is likely to be geared toward supplying agency officials with information on community support or opposition on an issue and breaking the deadlock on a highly contentious issues (Robbins et al. 2008), however it fails to provide opportunities for individuals to engage in the creation of space where deliberation and a sense of common problem definition and purpose can be developed. Fung identifies a process that targets *everyone* as one that is likely to consist of information dissemination (i.e., placing documents in public buildings or on an agency website), which is a necessary task in any participation effort. A final type of participant selection that Fung details is the *professional stakeholder*, which is similar in most respects to their lay counterpart, save that they are paid for their participation. The participants dimension of the "Democracy Cube" can be thought of as being "arrayed schematically from the most exclusive [1 – Expert Administrators] to the most encompassing [8 – Everyone]" (Fung 2006, p. 68)

The second dimension on the "Democracy Cube" addresses the manner in which participants interact with one another in the participation process. The first three levels of this dimension, *listening as spectator*, *expressing preferences*, and *developing preferences*, Fung labels communication, and he argues that administrators employing these modes make no effort to "translate the views or preferences of participants into a collective view or decision" (2006, p. 68). While they share this characteristic, they are also distinct, in that the first serves only to inform the citizen of the views of others, the second allows the citizen to express their views to other citizens and decision makers, and the third allows participants the opportunity to engage in

dialogue with others in order to better explain their own preferences and understand those of others. Fung is clear that this third stage may lead participants to "transform their preferences and perspectives" (p. 68), though there is no effort made by the agency to turn the results of these exchanges into an "official" understanding of the public's preference.

The decision-making level of this dimension is composed of three different modes, *aggregation and bargaining*, *deliberation and negotiation*, and *technical expertise*. Fung uses the New England town meeting as an illustration of aggregation and bargaining. He suggests that "[i]n this mode, participants know what they want, and the mode of decision making aggregates their preferences – often mediated by the influence and power that they bring – into a social choice" (2006, p. 68). Decision making that employs deliberation and negotiation allows participants to discover what they want through a process of deliberation in which "participants typically absorb educational background materials and exchange perspectives, experiences, and reasons with one another to develop their views and discover their interests" (p. 69). Note the difference from aggregation and bargaining, as this mode of decision-making does not assume that preferences are exogenous to the process.

The final mode of decision-making, *technical expertise* is one that does not normally include citizens, and relies on professionals to solve highly technical dilemmas. Fung suggests that the communication and decision-making dimension can be conceived as a single dimension that "can be arrayed on a single dimension that ranges from least intensive to most intensive, where intensity indicates roughly the level of investment, knowledge, and commitment required of participants" (Fung 2006, p. 69).

The final dimension on the Democracy Cube is that associated with Authority and Power. Ever since Arnstein's (1969) classic article on the "ladder of participation" and the possible

cooptation of public participation by administrators, the question of the ultimate influence on the final decision that citizens have in any given participation process has been of particular importance. Fung's cube conceives of a spectrum of influence with five discernable stages. The first stage is one in which the citizen participates, "to derive the *personal benefits* of edification or perhaps to fulfill a sense of civic obligation" (p. 69). Here, they have no expectation of influencing the decision outcome in one-way or another. It is worth noting that Fung indicates that many participation methods allot this level of authority and power to the citizen participant.

The second stage allows participants to exert a *communicative influence* on members of the public or officials who are moved by the testimony, reasons, conclusions, or by the probity of the process itself" (p. 69).

The third stage that Fung envisions a situation whereby decision makers invite the public to provide *advice and consultation* in order to assist officials in formulating their opinion on the best policy to pursue.

Stages four and five, *cogoverning partnership* and *direct authority*, represent a qualitative change in the nature of the relationship between citizen and official, in that in each of these stages citizens exercise some level of authority in making the decisions. An example of cogoverning is the Chicago "Local School Council that is composed of both parents and community members and the school's principal and teaching staff" (2006, p. 69). Finally, direct authority can be seen in the New England town meetings approach to participation. Fung arrays Authority and Power according to the influence and authority that public participants are allowed to exercise over the public decision from the least authority, 5 –Personal Benefits, to the most authority, 1 – Direct Authority (p. 69).

2.6 Conclusion

The relative lack of attention to the outlooks of planners in the literature, and the impact that their worldviews might have on the selection of participatory mechanisms included in Long Range Transportation Plans developed by MPOs, is the focus of this dissertation. By applying the lens of Grid-Group Cultural Theory to MPO planners and the LRTPs adopted by their organizations can offer a new perspective on which participatory mechanisms planners consider appropriate to a given planning context, as well as the those mechanisms that are overlooked and overemphasized owing to planners' notions of the appropriate role of the public in agency decision making.

Chapter 3: Research Design and Method of Analysis

3.1 Introduction

The intent of this research project is to assess the possible relationship between the GGCT worldview of MPO planning staff and their preference for particular public participation mechanisms in constructing federally mandated Long Range Transportation Plans (also called Metropolitan Transportation Plans). The mechanisms that are employed to bring the public into agency planning is an important avenue of study because, "[t]echniques and methods for engaging the public are the practical realization of any public participation strategy" (TCRP 2011, p. 15). While many factors play into the final selection of particular mechanisms, the existing literature has not applied the insights that flow from adopting Grid-Group Cultural Theory to planning staff in MPOs. An approach that takes into account the worldview of planners is an important contribution to the study of public participation in Metropolitan Planning Organizations because it can help to account for why certain planners choose one form of public involvement over others. As Thompson, Ellis and Wildavsky point out, "…preferences are never just randomly assembled; they are patterned, both within and between individuals. Choosing what to want is not like ordering a la carte, but rather more like ordering prix fixe from a small number of set dinners. The task for a social scientist is to describe and explain this patterning of preferences" (1990, p. 57). Understanding patterning, coupled with a appreciation that these patterns of social relations are also closely tied to "Shared values and beliefs," (Thompson and Wildavsky 1986, p. 170) means that the public participation choices planners make, while being subject to organizational pressures, are likely to reflect (to some extent) their own values.

This chapter begins by reporting the results of two phases of a pilot study that explored the variations in the public participation mechanisms contained in the LRTPs created by the nation's MPOs. The first section will address the idea that planners rely on the type of projects contained in the LRTP as guidance for selecting the mechanisms of public participation. Finding that similar plans resulted in dissimilar selection in both the type and quantity of mechanisms, the second portion of the pilot study solicited input from planners on a survey instrument to assess the GGCT worldview of MPO planning staff in an effort to assess the differences between those planning staff members who evinced an egalitarian, hierarchist, and individualist worldview and their preferred mechanisms. Description of the development of the survey questionnaire follows by tracing the problems identified by practicing planners charged with managing public participation practices in their MPOs LRTP development and identifying the changes made to respond to these critiques. Following an exposition of the basic conceptual framework is an explanation of the procedure by which individual mechanisms were mapped onto Fung's 'Democracy Cube.' Following this discussion is an explanation of the creation of both the independent and dependent variables used in the models dealing with each of Fung's three dimensions. The chapter concludes with an explanation of the hypothesized relationships between the GGCT worldviews and the choice of various public participation mechanisms.

3.2 Project-Based LRTP Mechanism Analysis Pilot Study – Phase I

MPOs are required to assemble Long-Range Transportation Plans that include multiple modes of travel. Road, bridge, transit, pedestrian and bicycle infrastructure projects can all exist within a single plan. Given that the variety of project types and federal requirements for public participation in the development of MPOs' LRTPs are similar across the board, can we explain the variation in public participation mechanisms by the type of projects contained within the

Long-Range Transportation Plan? To address this possibility, a document analysis of eight MPOs was carried out. Table 3 provides descriptive statistics for these MPOs. The eight LRTPs that were analyzed came from MPOs that ranged in population size from just over 200,000 in one selected MPO to more than 4.5 million population in another.

Table 3 - MPOs Selected for LRTP Analysis

MPOs	Area (Sq. Mi.)	2010 Population	Designation Year#
Pilot Study MPOs	1,162.5	905,097	1974-1975
All MPOs*	1,834.5	1,159,525	1975
* MPOs serving a population great than 200,000 # Median Year			

MPOs make their most recent LRTPs publicly available on their websites, as required by federal regulations. Each document was downloaded and analyzed with regard to the public participation process that was designed to support the development of the plan. To inform the coding of participation practices, a survey of all Florida MPOs conducted by Hopes, Kramer, and Williams (2006) was consulted to populate the initial list of possible participation practices. As the survey was conducted several years ago, coding revealed several participation methods not identified by Hopes, Kramer and Williams. To augment the existing data, results of a study of North Carolina MPOs Public Participation Plans conducted by Miles (2013), which found MPO use of social media and Web 2.0 applications to be important avenues for public participation, were added. The combined data yielded a final list of 44 possible participation mechanisms. Of the eight MPOs, MPO G's LRTP participation process employed the most participation methods with 22 different methods. MPO was the second most diverse plan, regarding the number of participation mechanisms employed. On the opposite end of the spectrum, MPO H only detailed five participation mechanisms for the development of their LRTP.

Looking at another factor that is thought to impact the type of public participation mechanism selected is the type of project being planned for. The authors of TCRP Synthesis 89, suggest that "the scale, purpose, and impact of the project" (2011, p. 11) is essential in helping to decide what type of process to employ. Their survey of 50 transportation agencies found that 18 of these agencies responded that the type of project had a "Very Significant" influence on the goals (and thus mechanisms) they developed in their participation process.

To test whether or not project type might be a key to understanding the variation I saw in the LRTPs I studied, I selected 5 of the 8 MPOs (MPO F, MPO C, MPO G, MPO H, and MPO E) and examined the content of their LRTPs and the corresponding participation mechanisms they employed. The project descriptions contained in the various LRTPs were coded, and are presented below in terms of the percentage of projects that comprised the LRTP (see Table 4).

Table 4 - Participation Mechanisms and Project Types

Project Type	MPO C	MPO E	MPO F	MPO G	MPO H
New Roadway	6%	3%	8%	3%	26%
Improve Existing Roadway	35%	15%	67%	31%	39%
New Multimodal Facility	45%	29%	0%	37%	4%
New Transit	6%	0%	0%	0%	0%
Maintain Transit	1%	2%	0%	7%	4%
New Bridge	0%	0%	0%	0%	2%
Improve Existing Bridge	0%	8%	0%	12%	0%
Operational Improvements	7%	43%	25%	10%	24%

Only the legally required Public Meetings/Hearings, Visioning, and Web Page were implemented by all five MPOs. It is also interesting to note that of the five plans examined, one contained as many as 22 different mechanisms, while one was composed of only 5 (the complete breakdown of the mechanisms by MPO can be found in Appendix E).

We can see that both MPO G and MPO E have a high percentage of projects that include the construction of *New Multimodal Facilities*. It is tempting, then, to suppose that constructing these types of projects lends itself to a MPO creating Advisory Committees (other than the Technical Advisory Committee (TAC) which is generally part of MPO operations) as an outreach tool. However, MPO C's LRTP reported the largest percentage of *New Multimodal Facilities*, and yet it didn't report forming Advisory Committees. Another example of a the variation that exists between planned projects and participation efforts can be seen by looking at those MPOs with a high percentage of projects classified as *Improving Existing Roadways/Interchanges*. We see that MPO C, MPO G, and MPO E each hold Open House Meetings. MPO E, however, has many more projects that are focused on operational improvements, and fewer that contemplate the improvement of existing roadways themselves. In fact, the most telling pattern that emerged from this initial analysis is that those activities that were required by legislation and regulation were those that were shared across all the MPOs. This explains the uniformity of each of the five MPOs in holding public meetings, visioning exercises, and maintaining a website. However, it still leaves us with our primary question unanswered, why do MPOs display the variation in participation practices in their LRTPs?

The results of this preliminary analysis are, of course, limited. One limitation is that while the average age of the five selected MPOs (1979) is within one standard deviation of the average age of the population of all 193 MPOs of interest (1975, std. dev. = 7.467), the population size of the MPOs included were significantly smaller than average. Whereas the average size of the population in the service areas of the MPOs of interest is 1,128,281 these five MPOs averaged a population of only 265,988. This difference in population size is potentially important. To make sure that concerns particular to larger MPOs were addressed, an MPO that served a larger

population (approximately 5 million) was selected for inclusion in the second portion of this pilot study, which consisted of using cognitive interviews of planning staff to develop and refine a survey instrument. The results demonstrate that the methods employed in the development of the LRTP vary widely even when the types of projects in the plan were similar.

3.3 Cognitive Interviews and Survey Development – Pilot Study Phase II

To improve the chances of effective application of Grid-Group Cultural Theory to the study of MPO planners' selection of participation mechanisms, I developed an initial survey instrument utilizing existing questions from several sources, and conducted cognitive interviews of planners in four MPOs to assist me in revising the questionnaire prior to developing a large sample survey.

3.3.1 Origin of Survey Questions

The survey questions used to construct the initial survey were taken from several different sources. The questions comprising the survey items concerned with assessing Grid-Group Cultural Theory worldviews were adopted from Ripberger, Jenkins-Smith, and Herron (2011), Jones (2010, p. 113) and Ripberger, Song, Nowlin, Jones, and Jenkins-Smith (2012, p. 725). These questions were in turn adapted from the foundational work of applying GGCT to survey based research instruments conducted by Dake and Wildavsky (1990).

The second major study from which survey questions were drawn was from the Transit Cooperative Research Program's Synthesis Report Number 89. This report surveyed 61 transportation agencies with planning responsibilities, of which 50 (82 percent) responded and sought to assess the current state of the practice and particular challenges to public participation. The report included a series of questions that were aimed at identifying specific factors that influenced the development of their public participation goals, objectives and programs. These

factors included eleven specific variables: the type of projects being considered, environmental justice issues, the need to reduce risk exposure, the level of controversy anticipated by a particular plan or program, the priorities of the sponsoring agency, the perceived need for community input in the planning process, legal requirements, safety issues, the available budget, political priorities, and the project schedule (TCRP 2011, p. 53). In this study, the concepts relating to factors that influenced the development of public participation were defined as follows: *Budget* is defined as "the amount of funding available for public involvement. *Need for community input* is "the degree to which an agency values community input." *Political priorities* are "the value elected officials put on a project." *Agency priorities* can be thought of as "the value agencies put on a project." *Type of project* is "the scale, purpose, and impact of the project." *Level of controversy* is "the degree of expected public opposition to the project. *Reducing risk exposure* [limiting potential litigation] is "the desire to proactively address opposition and minimize the potential for lawsuits." *Project schedule* deals with "the amount of time available to conduct public involvement." *Environmental justice issues* are "whether a project impacts environmental justice communities." *Safety issues* focus on "whether a project significantly impacts safety conditions." *Legal requirements* are "the specific federal, state, and local legal requirements for public involvement that need to be met." (TCRP 89 2011, p. 11)

The question that sought to establish the dependent variable, the type of mechanisms selected, was taken primarily from a survey of the public participation of Florida MPOs by Hopes, Kramer, and Williams (2006, p. 100-108). However, the age of the study meant that participatory practices that harnessed the functionality and versatility of advanced electronic tools (known as Web 2.0) and the movement toward the incorporation of social media tools necessitated the augmenting of the list of mechanisms. For this purpose, this study leveraged the

findings of Miles' (2013) content analysis of public participation plans developed by North Carolina's MPOs to fill this important gap in the listing of frequently utilized participatory mechanisms. The initial survey can be found in Appendix B and the next section will deal with the changes made to the survey as the result of the cognitive interviews conducted with the staff of the four MPOs identified above.

As Willis (2005) defines the approach, "Cognitive interviewing is a general method that developers of such materials [survey questionnaires, tax forms, medical forms, and so on] can use to critically evaluate this transfer of information. In particular, we use cognitive interviewing techniques to study the manner in which targeted audiences understand, mentally process, and respond to the materials we present – with a special emphasis on breakdowns in this process" (p. 2). Cognitive interviewing as an approach to developing better survey instruments generally takes one of two approaches. The first, known as the "think-aloud" approach (Willis 2005, p. 6) asks respondents to verbalize the entirety of their mental process as they read and respond to a proposed interview question. The researcher takes notes on the process to identify a respondent path of logic to answering a question with an eye toward noting the interpretations, definitions, and assumptions used in the reasoning to highlight potential areas of misunderstanding or ambiguity in question presentation and wording. The second approach, known as "intensive verbal probing," calls on the research to ask the respondent to reflect on what they interpret key terms in the question to mean, whether the individual can repeat the question back in their own words, or whether the question makes sense to them (Willis 2005, p. 68-70). Willis notes that while cognitive interviews may invoke either approach with good results, "intensive verbal probing is a core verbal reporting technique that has increasingly come into favor with cognitive researchers (Rasinski et al. 1999).

To design an effective cognitive interview process, Willis recommends that researchers commit to the following steps. First, develop a testing plan that selects individuals who possess the relevant characteristics relevant to the population the survey intends to target. Second, develop a preliminary survey instrument complete with specific probing questions to elicit the desired information regarding question clarity and comprehension. Third, recruit the appropriate participants and schedule interviews. Fourth, "administer questionnaires in private, one-on-one interviews" (2005, p. 8). Fifth, after securing the participant's consent, create an audio or video recording of the cognitive interview. Sixth, write a report of the findings (if a research team is involved and a clear understanding between team members is required). Seventh, modify the draft survey instrument to reduce or eliminate ambiguity or confusion in question presentation or wording. Finally, Willis suggests a second round of interviews with the revised document "if indicated and time permits" (2005, p. 8).

3.3.1 Interview Subjects

This research applied Willis' recommendations and selected ten MPOs to contact to request interviews with key staff assigned to the development of the public participation portion of their Long Range Transportation Plan.[2] By email, I contacted the Executive Director of the ten different MPOs in four states. The email asked the Executive Director to identify the staff member(s) who might best assist me in "understanding how the process of selecting participation mechanisms works" and also to engage in "pilot testing a survey instrument that with be distributed to MPO planners." Four Executive Directors replied to my request, and either provided me with the contact information requested, or forwarded the request directly to the

[2] Note: The names of the MPOs, the states in which they reside and the identities of respondents have been altered to maintain the anonymity of participants in accordance with the procedure outlined in the submitted to Virginia Tech's Institutional Review Board (IRB) Protocol# 14-1180.

appropriate staff member. The titles for the four MPO staff members differed as is common in MPOs across the country. Two of the respondents had the job title of Transportation Planner, while the remaining two held job titles that indicated a more specialized role in the organization. After making contact with these MPO planners and securing their consent to perform audio recordings of the cognitive interview process, the interviews were conducted either in person (2 interviews) or by phone (2 interviews).

The interviews were conducted between December 22, 2014 and January 23, 2015. The shortest of these interviews lasted 52 minutes and the longest, 86 minutes. The two in-person interviews lasted longer (73 minutes and 86 minutes) than did the 2 phone interviews (52 minutes and 55 minutes), suggesting that it is possible that the two different modes of collecting data influenced the amount of information conveyed to me by the interviewees. However, even if the phone interviewees conveyed less information overall, each interviewee answered each of the questions and was provided with opportunity to make comments about the survey by virtue of an open-ended question at the end of the interview.

Table 5 - Interview Characteristics

Individual ID	MPO	State	Interview Time (mm:ss)	Words in Transcript	Interview Date	Transcript Sent
Respondent 1	A	Alpha	52:07	6,098	1-9-2015	2-24-2015
Respondent 2	B	Beta	86:11	13,029	1-23-2015	2-24-2015
Respondent 3	C	Gamma	56:05	8,158	12-22-2014	2-24-2015
Respondent 4	D	Delta	73:25	11,968	12-22-2014	2-24-2015

3.3.2 Questionnaire Development

The participants in the cognitive interviews were sent a link to a draft version of the online survey prior to the interview so that they could familiarize themselves with the questions. To keep the interviews as short as possible, no questions were asked about the basic demographics questions that appeared at the beginning of the survey. The majority of the questions in the initial survey instrument presented little or no problems for the interviewees. However, several questions were either changed or dropped from the final instrument. This section will focus on a discussion of these changes. The first question that generated concerns among the interviewees belonged to a set of four questions that was intended to begin the assessment of the respondents Grid-Group Cultural Theory worldview (Trousett et al. 2015, p. 56):

> I am more comfortable when I know who is, and who is not, a part of my group, and loyalty to the group is important to me. I prefer to know who is in charge and to have clear rules and procedures; those who are in charge should punish those who break the rules. I like to have my responsibilities clearly defined, and I believe people should be rewarded based on the position they hold and their competence. Most of the time, I trust those with authority and expertise to do what is right for society.

This question (and three others with a similar paragraph construction) caused significant problems for the interviewees, especially the ambiguity associated with the word "group" in the question. All four interviewees indicated similar problems with this question (and the three other like it). Given this unanimous sentiment, these four questions were removed from the survey. This meant that whereas the initial instrument sought to include two separate sets of questions designed to measure GGCT worldviews; the final version included only the more traditional 12-question battery of GGCT questions (3 each to assess egalitarian, hierarchist, individualist, and fatalist worldviews). Each of the questions relied on a 7-point Likert-type scale ranging from

"Strongly Disagree" through "Disagree," "Slightly Disagree," "Neither Disagree Nor Agree," "Slightly Agree," "Agree," to "Strongly Agree."

Table 6 - Grid-Group Cultural Theory Survey Questions

Egalitarian Survey Items:
E1) What society needs is a fairness revolution to make the distribution of goods more equal.
E2) Society works best of power is shared equally.
E3) It is our responsibility to reduce differences in income between the rich and poor.
Individualist Survey Items:
I1) Even if some people are at a disadvantage, it is best for society to let people succeed or fail on their own
I2) Even the disadvantaged should have to make their own way in the world.
I3) We are all better off when we compete as individuals.
Hierarchist Survey Items:
H1) The best way to get ahead in life is to work hard and do what you are told to do.
H2) Society is in trouble because people do not obey those in authority.
H3) Society would be much better off if we imposed strict and swift punishment on those who break the rules.
Fatalist Survey Items:
1) Most of the important things that take place in life happen by random chance.
2) No matter how hard we try, the course of our lives is largely determined by forces outside our control.
3) It would be pointless to make serious plans in such an uncertain world.

This approach took seriously the suggestions given by respondent to rely on questions that sought to assess agreement or disagreement single sentence. The interviewees responded to this question format much more positively than the paragraphs style items, and these questions were retained for the final version of the survey. Additionally, following Jones (2010), these

items were presented in random order to respondents during the administration of the survey instrument.[3]

The next question that generated substantive feedback from the interviewees related to the importance that planning staff placed on reducing risk had on the design of the public participation process. Two interviewees expressed concern that the factor "Reducing Risk Exposure" was unclear. They recommended changing the prompt to read, "Limiting Potential Litigation," which better explained the idea.

The next question that presented problems for the interviewees contained a list of 44 different public participation mechanisms and presented them with this prompt: **If you could choose your *ideal public participation mechanism(s)* for inclusion in the next LRTP/MTP development which would you select? Please choose all that apply.**

Three of the four interviewees indicated that without some type of limitation, they would each likely select as many mechanisms as allowed by the survey, as they would rather have more information than less. I had not anticipated this response to the question, and given that three of the four interviewees pointed to a similar possible outcome, the question that appears in the final survey asks respondents to select their top 10 mechanisms for pursuing participation.

I also sought to press the interviewees on the contents of the list to see if it contained any mechanisms that they were unfamiliar with or were unclear about. Given their feedback, I retained the list in the initial survey in the final instrument. It should also be noted that four

[3] Interviewees also voiced concern regarding the presence of GGCT questions. It was felt that these questions would be viewed as out of place in a survey that purported to explore public participation. Measures were taken to address this concern (including a more explicit statement of study goals and theory in the invitation email, and a more detailed paragraph introducing GGCT in the survey. Even so, of the 601 individuals who consented to participate in the survey, only 460 provided responses for all the GGCT assessment questions indicating that the participation of more than 23% of those who began the survey ended when these questions appeared.

"Other" options were made available, which allowed planners to provide information regarding mechanisms that were not listed on the survey itself.

3.4 Hypothesized Relationships

Integrating Cultural Theory and Fung's Democracy Cube points to hypothetical relationships between CT types and preferences for participation mechanisms. Ney and Verweij (2014), who also used GGCT to hypothesize disparate approaches to public deliberation, support such theorizing. They indicate that egalitarians approach public participation by means of "an open debate among all those who could be affected by the final outcomes…The deliberations should ideally be held in a public space, organized in the form of a roundtable. Decisions emerge through the formation of a collective will indicated by a full consensus" (2014, p. 627). Ney and Verweij suggest that the hierarchist view of participation "is all about experts and leaders. This approach presumes that stakeholders' judgments are too unreliable and that policy problems are too complex for deliberation to be left to the free interplay of social forces" (p. 627). In theorizing about individualists, they posit a "way of designing public deliberation [that] sets up competitive processes that provide stakeholders with different views on the problem and its solution with the freedom to implement their ideas" (p. 628). Ney and Verweij also use Fung's research to organize the dimensions of the structural nature of public involvement, but, they do not rely on Fung's 'Democracy Cube,' to the extent that I do here.

3.4.1 Egalitarians: Participant Dimension

The main concern for egalitarians is to design a process that includes, "high participation structures in which every decision is 'up-for-grabs'" (Hood 1998, p. 9) While completely achieving these lofty goals is unlikely, it is important to note that they are theorized to strive for

this as an ideal. Egalitarian planners want mid-range values on Fung's Cube in this dimension. This is because they distrust representatives of "the system" as they "share with individualists a distaste for 'statism' and professional management. Instead, they tend to prefer *group self-management*…The egalitarian bias is to distrust professionalism in service production and to resist the conventional managerial doctrine embodied in the US Progressive-era idea of a 'policy-administration dichotomy'" (Hood 1998, p. 122).

3.4.2 Egalitarians: Communication & Decision Mode Dimension

Egalitarian planners want mid-range values in this dimension. This is because they want "communal 'participative' decision-making involving most or all of the members" (Hood 1998, p. 10). As Ney and Verweij put it, egalitarians desire a situation where decisions are reached "through the formation of a collective will indicated by a full consensus" (2014, p. 627). Communicating in overly technical terms, or relying on expertise to justify the validity of a given communication is likely to be distrusted by egalitarians and egalitarian planners will seek to avoid this. Similarly, egalitarian planners are unlikely to think that high-values in this dimension are meaningful instances of public participation. Instead egalitarian planners will emphasize "mutuality" meaning that "organizations and public services should be run on the basis of maximum participation and minimum differentiation of rank or status…" (Hood 1998, pp. 125-26).

3.4.3 Egalitarians: Authority & Power Dimension

Egalitarians are likely to prefer high-values in the authority and power dimension, assuming that the other two dimensions comport with their idea of legitimate social relations. However, since "egalitarians typically aim to minimize the distance between producers and consumers, they normally seek to limit the difference between top officeholders and the rank-and-file in

organizations, and this theme is the other commonly occurring element in the egalitarian preference for group self-organization," (Hood 1998, p. 124). Thus, they are likely to have a healthy skepticism of concentrated power that is coupled with exclusivity in the participants dimension. Given that this study focuses on planners in MPOs, it is possible that they either view themselves as a part of the egalitarian group or that they, in order to protect their professional position, take a softer position than they might otherwise if they were outside the MPO. This means that they may also view as legitimate a situation where co-governing (2) is the organizational arrangement underpinning a participation mechanism. Therefore (see Figures 3-5):

> H1: Planners with an egalitarian GGCT worldview will select more participation mechanisms whose internal structure is characterized by mid-range scores on Fung's *Participants* dimension (from *open with targeted recruitment* to *lay stakeholders*).
>
> H2: Planners with an egalitarian GGCT worldview will select more participation mechanisms whose internal structure is characterized by mid- to high scores on Fung's *Communication and Decision Mode* dimension (from *deliberate and negotiate* to *develop preferences*).
>
> H3: Planners with an egalitarian GGCT worldview will select more participation mechanisms whose internal structure is characterized by high scores on Fung's *Authority and Power* dimension (*advise/consult* to *direct authority*).

Figure 3 - Participant Dimension by HT Orientation

Participant Dimension (More Closed <----------> More Open)								
GGCT Worldview	Expert Administrators	Professional Representatives	Professional Stakeholders	Lay Stakeholders	Randomly Selected	Open w/Targeted Recruitment	Open Self-Selected	Everyone
Egalitarian	□	□	□	X	X	X	□	□
Hierarchist	X	X	X	□	□	□	□	□
Individualist	□	□	X	X	X	X	X	X

3.4.4 Hierarchists: Participants Dimension

Hierarchist planners favor "socially cohesive, rule-bound approaches to organization" (Hood 1998, p. 9) and will be most comfortable with limiting participation to those elected and appointed officials in positions of authority as evidenced by "the Progressive recipe for good public management…independent regulation by enlightened technocrats; public administration as a middle-class profession…What makes the Progressives' solution 'hierarchist' is its belief in certified expertise in both public and private management, by professional dedication allied to the authority of science" (Hood 1998, pp. 90-1).

3.4.5 Hierarchists: Communication & Decision Dimension

Hierarchist planners will desire a very proscribed set of relations between participants, "…people are not left to work out how to behave in an *ad hoc* way. Instead, there are general ground rules (not necessarily written down) that are widely understood. Unlike egalitarians, hierarchists

believe orderly rules of behavior and authority structures are needed to avoid chaos, and have little faith in immanent self-organizing or self-steering processes" (Hood 1998, p. 73). This suggests that hierarchist planners are likely to approve of low-values in this dimension, basing decisions on technical expertise in terms of both the planning staff and the specialized knowledge of other agency employees and private sector experts (owners of shipping interests, for instance).

3.4.6 Hierarchists: Authority & Power Dimension

Hierarchs can be thought of as carrying on the spirit of American Progressivism as:

> Progressives argued public services should be provided by professionals, normally engaged in a lifetime career, and recruited on the basis of merit and appropriate academic qualifications rather than political connections. To mark off the turf of these professionals from that of elected politicians, Progressives adopted Woodrow Wilson's (1887) famous doctrine of a 'politics-administration dichotomy' – the idea that politicians should concentrate on setting broad guidelines while professional managers work on the details of delivery and execution. The assumption is that representative democracy is only possible if policy decisions can be separated from management – otherwise, everything is 'politics' and the possibility of anything other than participative democracy disappears. (Hood 1998, p. 90-91)

This suggests that hierarchist planners would seek to avoid conferring power in participation to the public and deploy procedures that allowed the planner (as "expert") to retain as much power over the process and final decision as practicable. This translates into hierarchists advocating mechanisms that focus on educating individuals and communicative influence only. Individual education is essential, as the individual citizen must have access to information about

agency action if they are to be able make reasonable demands on the political system (through elections or appeals to elected officials) to either continue or abandon current practice. As MPOs are, in part, political entities, since their policy boards are composed of representatives of local, regional, state, and federal governments, they need to be open to some influence to maintain their legitimacy among the public. In addition, the planning staff is likely to recognize that local knowledge can help, in certain cases, to improve agency decisions and thus, would tend to support participatory exercises that facilitated the collection of information and preferences from the public, but would oppose more involved processes. Therefore (again, see Figures 3-5):

> H4: Planners with a hierarchist GGCT worldview will select more participation mechanisms whose internal structure is characterized by low scores on Fung's *Participants* dimension (from *expert administrators* to *professional stakeholders*).
>
> H5: Planners with a hierarchist GGCT worldview will select more participation mechanisms whose internal structure is characterized by low scores on Fung's *Communication and Decision Mode* dimension (*technical expertise*).
>
> H6: Planners with a hierarchist GGCT worldview will select more participation mechanisms whose internal structure is characterized by high scores on Fung's *Authority and Power* dimension (*direct authority*).

Figure 4 - Communication & Decision Mode by HT Orientation

Communication & Decision Mode Dimension (More involved <----------> Less involved)						
GGCT Worldview	Technical Expertise	Deliberate & Negotiate	Aggregate & Bargain	Develop Preferences	Express Preferences	Listen as Spectator
Egalitarian	□	X	X	X	□	□
Hierarchist	X	□	□	□	□	□
Individualist	□	□	X	X	X	X

3.4.7 Individualists: Participants Dimension

When trying to understand whom, exactly, should be included in participation processes, from the view of an individualist planner, we can turn to Jeremy Bentham. As Hood states, "Anticipating one of the primary themes of classical management theory, [Bentham] argued for a single responsible person in each position of authority rather than a group, on the grounds that individuals cannot shift blame onto their colleagues, cannot evade decision by non-attendance at committee meetings or abstention and can be made responsible to an outside body for everything done by the office" (1998, pp. 116-117). This suggests that individualist planners will shy away from constructing collective bodies that are charged with the responsibility for the generation of any vital input into the process. Instead, they are likely to place emphasis on individuals relying on their understanding of their own interests to motivate participation in relatively open processes that allow them to register their preference with agency planners. This suggests that they are likely to support processes that deal with participation selection by means of *open self-selection* and *open with targeted recruitment*. In truth, individualists are likely to accept any

method for selecting participants that is non-coercive and focuses on involving non-governmental agents (owing to their distrust of government officials). This allows the individualist planner to endorse a wide array of processes from *professional stakeholders* to *everyone*. The main consideration to keep in mind when thinking about individualists is they endorse "atomized approaches to organization stressing negotiation and bargaining" (Hood 1998, p. 9).

3.4.8 Individualists: Communication & Decision Mode Dimension

Individualists place "heavy stress on transparency and publicity as a general principle of public management" (Hood 1998, p. 115). This suggests that individualist planners view provision of information to the public as essential to public participation, which would suggest that listening as a spectator (a high value on Communication & Decision Mode Dimension) would be a legitimate form of participation. The individualist planner would find also find the creation of participatory mechanisms that allowed individuals to *express preferences* to others, work to *develop preferences* and then *aggregate and bargain*. This is because the individualist planner will likely appreciate the difficulties associated with government agencies attempting to understand what is "best" for citizens, and will seek to create forums where interested parties can exchange information and bargain with one another to achieve more efficient solutions. However, this only goes so far, whereas egalitarians would desire a participation mechanism that aims to facilitate deliberation and the discovery of "the public good," individualist planners would understand the interests of participants to be imported into the public process and not as arising out of the participation exercise itself. Therefore, the highest form of interaction for an individualist planner would be the aggregation of individual interest via bargaining amongst participants.

3.4.9 Individualists: Authority & Power Dimension

Individualists are likely to be skeptical of vesting too much power in public authorities. Individualist planners are likely to be uncomfortable with processes that either convey too much authority to the participants, as it would represent an opportunity for public authority to impose a decision made by self-interested participants on the public as a whole. Given that individualists view people as calculating and opportunistic, providing a government forum that could be used to personal advantage is likely to be viewed in a negative light. Instead, individualist planners are likely to view mechanisms that are designed with lower levels of authority and power *(individual education, communicative influence, and advise/consult)*. This allows individuals to learn about the work of the agency, make statements that aim to sway agency staff, and also provide individual views on proposed agency action. Therefore:

> H7: Planners with an individualist GGCT worldview will select more participation mechanisms whose internal structure is characterized by high-range scores on Fung's *Participants* dimension (from *everyone* to *professional stakeholders*).
>
> H8: Planners with an individualist GGCT worldview will select more participation mechanisms whose internal structure is characterized by mid- to high scores on Fung's *Communication and Decision Mode* dimension (from *listen as spectator* to *aggregate and bargain*).
>
> H9: Planners with an individualist GGCT worldview will select more participation mechanisms whose internal structure is characterized by low scores on Fung's *Authority and Power* dimension (either *communicative influence* or *individual education*).

Figure 5 - Power & Authority by HT Orientation

Power & Authority Dimension (More Control <----------> Less Control)					
GGCT Worldview	Direct Authority	Co-Govern	Advise/Consult	Communicative Influence	Individual Education
Egalitarian	X	X	X	□	□
Hierarchist	X	□	□	□	□
Individualist	□	□	□	X	X

3.4.10 Fatalists: Participants Dimension

Planners that subscribe to the fatalist GGCT worldview are distinguished from the three other "active" cultures. Indeed, many times fatalists are either left out of many GGCT analyses (Hood 1998, pp. 145-146) or when included, GGCT scholars are often unclear whether fatalism is "a *viable* basis of organization" (Hood 1998, p. 149). However, I believe that fatalism is relevant to the approaches that planners take in transportation planning, especially as they relate to public participation. With so many scholars and practitioners pointing out the failings with participation and the often contentious and counter-productive participation processes, it seems that planners may feel that there is little point to engaging in participation. Indeed, as Hood notes, "The central principle on which a fatalist society operates is a rejection of co-operation in any form, as something likely to have unpredictable and possibly unpleasant results" (Hood 1998, p. 148) a notion that would suggest that fatalist planners would be skeptical of any participatory process. This suggests that fatalist planners are more amenable to processes that are open to all (i.e., *open*

self-selected and to *everyone),* because the planner need not formulate plans to engage particular groups and can, instead rely on fate to guide who decides to attend a given process or receive a given message.

3.4.11 Fatalists: Communication and Decision Mode Dimension

As fatalist planners relative lack of confidence in the process of participation to produce meaningful impacts is likely to cause them to rely on mandated processes, which included public hearings, the use of visualization, and the provision of documents on agency websites (CFR 450.316). These types of activities all fall on the less involved end of the communication & decision mode dimension, meaning that fatalist planners are more likely to engage in processes where the participants *listen as a spectator*.

3.4.12 Fatalists: Authority & Power Dimension

The fatalist, being characterized as high-grid/low-group is likely to accept direction and decisions from the top as they are typified by "Low co-operation, rule-bound approaches to the organization" (Hood 1998, p. 9). Involving groups (above and beyond the minimum mandates) is likely to be viewed as a waste of time, since the planner is resigned to the fact that the decision is largely outside of their control. In the MPO context, this authority is likely to be represented in the policy board, and the impact of the participants in any public participation process is likely to be viewed as minimal and relatively unimportant. Therefore, since the planner sees no real possible reason for intensive efforts to be expended for no return, the power and authority dimension of mechanisms pursued is likely to include those focused on *individual education*. A final prediction regarding fatalist planners is that since they cannot be understood to regard the participation process as having any real effect on the end results, they are likely to employ *fewer* mechanisms than the other GGCT types, overall. Therefore:

> H10: Planners that adhere to a fatalist GGCT worldview will select minimal participation mechanisms, in light of their deference to authority and feelings of inability to engage in constructive action, these will likely be only those that are required by the relevant legislation and regulations (i.e., public hearings, visioning exercises, and presenting information on agency websites).

3.5 Mapping Procedure

Mapping the participation mechanisms onto Fung's Democracy Cube started with descriptions of public participation mechanisms found in a guidance document, *Public Involvement Techniques for Transportation Decision-Making*, published by the Federal Highway Administration (FHWA). This document explains the structure of numerous public participation mechanisms, for instance, the guide indicates that when addressing the question of "Who Participates?":

> **Briefings can involve any interested group –** elected officials, organization heads, appointed officials, community groups or associations, business leaders, or professional associations. When an agency initiates a briefing, it asks for participation by specific individuals. When a community group requests a briefing, an agency should ascertain the group's interests and send appropriate, knowledgeable staff. Community groups may want a personalized presentation of a proposal in relation to their neighborhood. (FHWA 1996, p. 79)

This suggests that small-group briefings open in the sense that any group can request a briefing but that there is also targeted recruitment, since planners may also select specific groups and individuals to attend these briefings. Therefore, this mechanism was coded to be *open with targeted recruitment* (a score of 6 on Fung's Participant Dimension).

Insofar as the Communication and Decision-Making Dimension, the guide indicates that:

> **Briefings help prevent misunderstandings** by the public by supplying accurate information and helping to get the message out. They also help prevent agencies from misunderstanding the viewpoint of the target groups.
>
> **Briefings allow an agency to convey a message to the community.** By briefing a specific geographic, social, or professional group, an agency reiterates a message or clarifies an issue. Planners for New York's Long Island Expressway high-occupancy

> vehicle (HOV) land held briefings with local businesses to assess different elements of the design. (FHWA 1996, p. 79)

This description makes clear that the purpose of these small group meetings is provide information to the public and make the agency's message more clear to groups with specific interests. This suggests that briefings are used more to disseminate information and not to craft collective solutions to problems. This would place this mechanism squarely on the *express preferences* position on Fung's Communication & Decision Making Dimension (a score of 5).

The Power and Authority dimension in Fung's framework is addressed by the FHWA guidance document by omission. When discussing how the agency will use the output of the meeting, there is no discussion which indicates that the preferences that are expressed are treated as anything that might be binding on the agency, nor does it seem to suggest that participants' input should be granted any greater weight than information gathered in other ways. However, owing to the ability of individuals to express their preferences and engage agency staff in a discussion regarding projects and plans, this mechanism is placed in the category of *communicative influence* (a score of 4 on the Power and Authority Dimension).

All the mechanisms that appeared in the final questionnaire were subjected to a similar process to map them on to Fung's three dimensions (see Appendix A for a complete map). This process is similar to one undertaken by Bherer and Breux (2012, p. 392) who use six different factors (including Fung's three dimensions) to map three different mechanisms used in Canadian cities. However, the process employed in this dissertation chose to employ the numerical ordering for each scale to conduct a statistical analysis whereas Bherer and Breux relied on more qualitative assessments to draw their conclusions regarding the impacts of a diversity of participatory mechanisms on public participation.

3.6 Methodology

The survey designed to collect the data for hypothesis testing was created and administered using the *Qualtrics* on-line survey software. In addition to questions designed to identify actual and ideal participation mechanisms, the survey employed a series of questions used in prior research to elicit the GGCT worldview of the planners and agency directors. The majority of the questions intended to identify participation mechanisms originated in Hopes, Kramer, and Williams (2006) study of Florida MPOs.

3.6.1 Independent Variable – GGCT Worldviews

To compute the independent variable of GGCT worldview, I followed the procedure employed by Jones (2010, p. 115). This method calls for the identifying the highest GGCT value (based on the survey questions) and subtracting the scores of each of the other dimensions from the highest.

$$If\ T > A\ \&\ B\ \&\ C, then\ T = \sum\{(T - A) + (T - B) + (T - C)\}$$

Where:

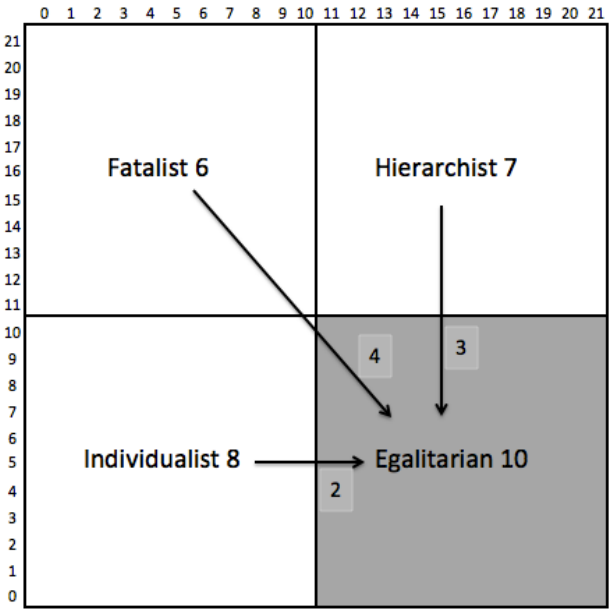
T = the highest GGCT Worldview Score

A,B,C = the lower GGCT Worldview Scores

This resulted in identifying the distance of the highest score from each of the other worldviews, which yielded the dominant GGCT worldview. To illustrate, if an individual scored 6 on the fatalist questions, 7 on the hierarch questions, 8 on the individualist questions, and 10 on the egalitarian questions, this would result in the following equation (see also, Figure 6):

$$T = \sum\{(10 - 6) + (10 - 7) + (10 - 8)\} = 9$$

Figure 6 - GGCT Worldview Categorization Procedure



The number associated with the categorization is an indication of the strength of the GGCT worldview demonstrated relative to the other GGCT worldviews. This is because it is composed of the sum of the differences between the highest GGCT worldview and the other three worldviews. This method of categorizing GGCT responses, while not identical, is similar to numerous other studies that use grid-group cultural measures to assign individuals to worldview (see Wildavsky and Dake, 1990; Dake 1991; Meader, Uzzell, and Gatersleben 2006). To include the categorical GGCT worldview variables in the logistic regression models, the three were dummy coded.

3.6.2 Control variables

The survey also collected data for control variables that have been included in models in the literature (TCRP 2011) as relevant to the choice of participation mechanisms. A number of questions on the survey were taken from the Transit Cooperative Research Program's Synthesis

Report number 89. These questions generated variables associated with factors (other than GGCT worldviews) that have been theorized to have an impact on the design of public participation processes. It is important to note that each of the following variables was ranked by the respondent on a 5-point Likert-type scale of 1 indicating "Not Important at All" to 5 "Among the Most Important Factors." The control variable with the lowest mean reported impact on the planner's design of the participatory process was that associated with limiting potential litigation, with a mean of 2.2306 (see Table 6). The next variable was the level of controversy that a perceived plan might engender (mean of 2.5155). It is worth noting that these two variables seem to be related, as it would be reasonable to conclude that controversial plans and projects would be more likely than non-controversial ones to lead to litigation. The variable which seeks to measure the importance of political priorities on the planner's design of public participation processes, and here the mean value is reported as 2.7603, indicating that it is considered less than a moderately important factor. These three variables were the only ones derived from the TCRP study whose mean scores were below the mid-value of 3, on the scale.

A response to the survey question related to the amount of time the respondent had served in their current position at the MPO was, provided by only 410 individuals. After breaking the respondents into the three GGCT groups with sufficient numbers for analysis (only 8 respondents were found to have a fatalist worldview) and eliminating tied scores on the GGCT worldview assessment, it was necessary to drop this control variable from the analysis to maintain sufficiently large groups for analysis.

The variable that assesses the importance of safety issues on the planner's selection of participatory mechanisms reported a mean value of 3.2383. The reported impact of project type demonstrated a mean value of 3.3238. The importance of project schedule on the design of

public participation practices shows a mean value of 3.3065. These means suggest that most respondents judged the type of project and the delivery schedule of moderate importance in their decisions regarding the design of participatory practices.

Budget concerns were reported by respondents to have a slightly more than moderate impact on their design of public participation process, with a mean value of 3.5762. Environmental Justice issues and legal requirements both ranked slightly higher than budget impacts with mean values of 3.6427 and 3.6727, respectively. The priorities of the MPO itself (agency priorities) had a mean value of 3.7706. Finally, as we might expect, the factor in public participation procedure selection that generated the highest mean value was the importance of community input (mean value of 4.2397).

Two additional control variables related to planner characteristics. The sex of the respondent was measured on a scale of 0 to 1, with 1 representing male. The mean value of .6313 suggests that the majority of the respondents were male. Additionally, the variable that measured education was originally an eight-point scale moving from "Less than High School" (as the lowest) to "Professional Degree" (at the highest). The responses to this question were heavily concentrated in the middle of the range, with 30 percent of respondents indicating they had a 4-Year College Degree and 64 percent answering that they possessed a Masters Degree. Only 2 percent reported having less than a four-year degree and 4 percent indicated they had more than a master's degree. In light of this distribution, the variable was transformed into a dichotomous measure with the value of 1 indicating that the individual had earned at least a masters degree, and 0 indicating they had not.

The last set of control variables sought to assess the metropolitan area in which the MPO operates. Specifically, a variable measuring the percentage of people in the area who use public

transit ranged from 0 percent to 58 percent, with a mean value of 4.7. Finally, the percentage of Caucasian citizens in the area was included as a variable that sought to assess the homogeneity of the area. The lowest percentage reported was 25 percent with the highest 97.9 percent. The mean value for this variable was 80.21 percent Caucasian.

Table 7 - Descriptive Statistics Independent Variables

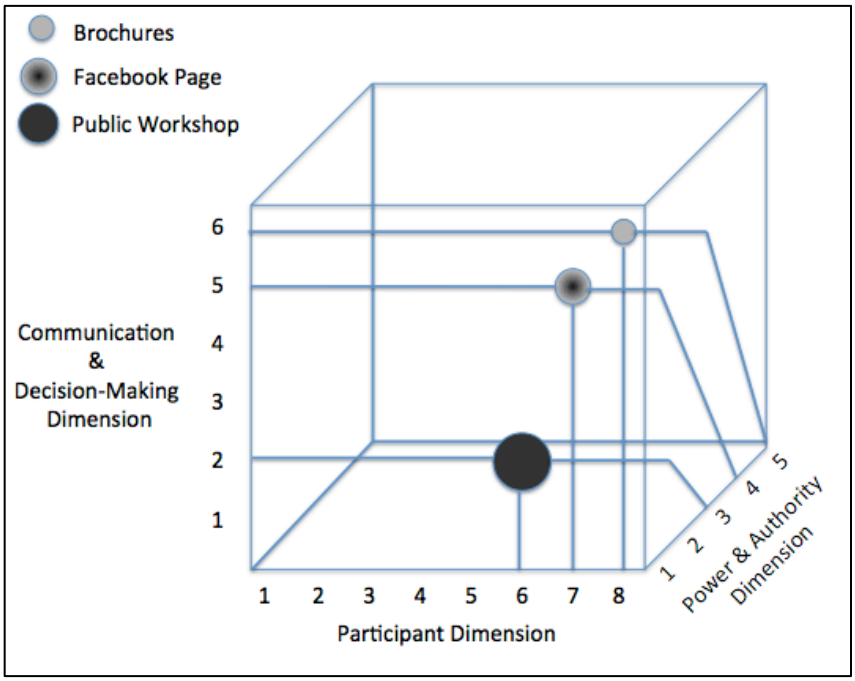
Variable	Min	Max	Mean	St. Dev.
Independent Variables: GGCT Worldview				
Egalitarian	0	1	.5704	.49565
Individualist	0	1	.2211	.41551
Hierarchist	0	1	.1884	.39156
Fatalist	0	1	.0201	.14052
Control Variables: Other Factors				
Project Type	1	5	3.3238	1.16432
Environmental Justice Issues	1	5	3.6427	1.06651
Limiting Potential Litigation	1	5	2.2306	1.16271
Level of Controversy	1	5	2.5155	1.07439
Agency Priorities	1	5	3.7706	0.98120
Need for Community Input	1	5	4.2397	0.92162
Legal Requirements	1	5	3.6727	1.15406
Safety Issues	1	5	3.2383	1.21257
Budget	1	5	3.5762	1.21572
Political Priorities	1	5	2.7603	1.17104
Project Schedule	1	5	3.3065	1.09191
Control Variables: Planner Demographics				
Sex	0	1	0.6313	0.48306
Education	2	8	5.6793	0.64880
Control Variables: MPO Characteristics				
Influence on Process	1	5	3.0605	1.16618
Percent Using Public Transit	00.0	58.0	4.7	6.5
Percentage of Population Caucasian	25.00	97.90	80.21	12.12

3.6.3 Dependent Variables – Participation Mechanisms

Recalling Fung's three-dimensions of mini-publics outlined in the Democracy Cube (2006), three dependent variables in this study were computed, for the Participant, Communication and Decision-Making, and Power and Authority dimensions, by summing the scores for each of the (up to 10) participatory mechanisms selected by respondents. In the example below (see Figure 7) the hypothetical respondent chose three mechanisms. By taking the Participant score for

Brochures (8) and adding it to the scores for the Facebook Page (7) and Public Workshop (6) this would result in a Participant score of 21. Repeating the procedure for the three mechanisms on the other two dimensions yields a Communication and Decision-Making score of 13 and a Power and Authority score of 12. These scores were then standardized by dividing them by the total number of mechanisms selected, as many respondents choose to select fewer than the maximum allowable number of 10. Therefore, our hypothetical survey respondent would have generated a Participant score of 7 (21 divided by 3), a Communication and Decision-Making score of 4.34, and a Power and Authority score of 4. These scores were then transformed into a trichotomous variable of high, mid-range, and low scores using SPSS 20.0 to break respondents into three groups. These categorical variables were computed because the hypotheses postulated were framed in terms of high, mid-range, or low values on each of the three dimensions of the Democracy Cube. These categorical variables were then used as dependent variables in the multinomial logistic regression to assess the relationship between the GGCT worldview and the scores on the three dimensions. This approach resulted in the construction of three models, referred to hereafter as the *PART Model* (for the Participants dimension), the *COMM Model* (the Communication and Decision-Making dimension) and the *PWR Model* (for the Power and Authority dimension). Each of these models contains, as predictor variables, the GGCT worldview of the survey respondent (coded as a dummy variable) and the aforementioned control variables.

Figure 7 - Example of DV Construction



3.6.4 Population and Sampling

The survey identified 192 MPOs serving a population of more than 200,000 individuals, according to 2010 data compiled by the United States Department of Transportation. The threshold of 200,000 or more was used because the Federal Transit Administration and Federal Highway Administration generally classify these larger MPOs as Transportation Management Areas (TMAs) (23 U.S.C. 134 and 49 U.S.C. 5303). TMAs are subject to several additional federal planning requirements. First, they must ensure that their planning process is conducted in partnership with the State in which they are located and any transit operators located with their urbanized area. Second, TMAs must develop specific plans to address congestion management. Finally, the planning process utilized by TMAs is subject to federal certification every three years (Ulster County n.d.). Therefore, in an attempt to control for possible differences in the planning process between MPOs of different sizes, the larger MPOs were selected for this study. Using a combination of information made available on MPO websites, Internet searches, and

staff information found in individual LRTP and Public Participation Plans, a list of 1,901 individuals was constructed as a sample of the population of interest. As Shapiro notes, "if the sampling frame consists of a list of every unit, together with its address, in the population of interest, and if a mail survey is to be conducted, then a simple list sampling would be appropriate" (Lavrakas 2008, p. 777). When applied to this online survey approach, this means that the population and the sample are intended to be equivalent. However, it is not possible to state that each email invitation reached the individual identified as a staff member in the MPO with responsibilities for transportation planning, as the presence of various electronic filters (spam filters) may have prevented the delivery of the invitation.

Additionally, while I attempted to identify the appropriate staff members from the information available to me from publicly available documents, subsequent contact from some targeted individuals suggests that the method was far from perfect. I received 51 emails following the survey invitation indicating that the targeted individual did not participate in the development of the public participation portion of the Long-Range Transportation Plan. Most of these responses contained contact information for the individual they perceived as being an appropriate contact for the survey. In a great many cases, this individual had already been identified and had received an invitation to the electronic survey, however, in those cases where I had not already invited them to participate, they were issued an invitation to the survey.

Using the *Qualtrics* panel tool, 1,901 MPO staff members were selected to receive and invitation to take the survey. The survey was sent on Monday, February 9, 2015 at 9:15 a.m. Eastern Standard Time. This time was chosen to be approximately one week after letters announcing the research project to the director (or staff supervisor) of the MPOs (18 of these letters were returned by the USPS because the director had left, or the MPO had moved its

offices since the 2010 contact data was collected by the U.S. DOT). For several of the MPOs, only a single staff member was identified, and no letter was sent. Dilman (1999, p. 151) recommends this practice as an approach that uses a pre-notification letter has been shown to increase response rates. In addition to this benefit, the letter was intended to make certain that the administration was aware of the survey, in order to make certain that they did not feel blind-sided by the researcher circumventing established formal chains of authority in the organization and reaching out to their staff without their knowledge. The letter was sent using department letterhead following Dilman (1999), who indicated that "people are more likely to comply with a request if it comes from an authoritative source (p. 20). The letter contained a brief introduction of my research, information related to study's approved IRB protocol, and other pertinent information. The letter was followed by an email sent to each agency director and transportation planning staff, containing a brief introduction to the study and a link to the on-line survey. Each recipient of this email received two follow up emails to remind them about the survey.

While the considerable difference in size of the geographic areas might seem to present questions of comparability, it is important to keep in mind that Grid-Group Cultural Theory is being used to examine the worldview of individual planners and that it is hypothesized that the decisions about the actual mechanisms to be used are made (in large part) by the planner(s) tasked with developing the LRTP/MTP. The focus on the planning staff within the MPO is appropriate, because as CFR §450.322 (i) places the responsibility for the development and implementation of public participation mechanisms used in the LRTP/MTP squarely on the MPO itself. As any organization is comprised of its members, surveying the individuals tasked by the responsible organization for creating a required planning product seems an appropriate approach to understanding the relationship between the GGCT worldviews of the planning staff and the

participation mechanisms contained in the final LRTP/MTP. While there may be both formal procedures (like approval by the MPO Policy Board) and informal group dynamics among the MPO staff (dominant personalities and the like) that could serve to modify the relationship between the individual's GGCT orientation and the observed mechanisms contained in the plan, this dissertation seeks to draw attention to the planner's individual GGCT worldview. It is important to note that this dissertation is not an attempt to assess an MPO's organizational culture, defined by Cameron and Quinn (1999, p. 15) as, "what is valued, the dominant leadership styles, the language and symbols, the procedures and routines, and the definitions of success that make an organization unique." Instead, the concept under investigation here, an individual's GGCT orientation, exists and operates at a more basic level. A planner's worldview relates to their understanding of the type of social relations they see as legitimate, and to the extent that the GGCT orientations of the collection of planners who work to create the LRTP/MTP impact the selection of participatory mechanisms, we should see a fit (more or less) between their mix of GGCT worldview and the mechanisms that appear in the plan.

Of course, it is always possible that the interaction between the participatory mechanisms included in previous LRTPs adopted by an MPO may influence the planners instead of the other way around. The possibility that the plan affects the planner is troubling, but it is unlikely that this research will be able to effectively address this possible interaction. This is because even if a particular planner had not engaged in the development of a LRTP/MTP prior to their involvement in the current plan, it is likely that they exposed themselves to previous LRTP/MTP plans adopted by the MPO pursuant to their duties as planning professionals. If we can assume that professional planners are likely to familiarize themselves with the operative documents of their organizations, then we would have a difficult time isolating the possible affect this

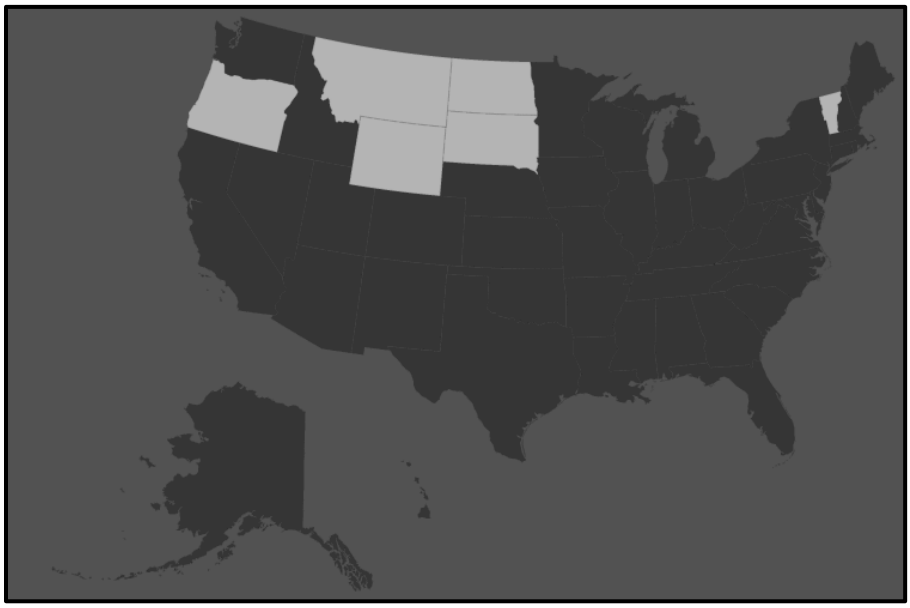
information would have on the planner as the practice would tend toward ubiquity.

More to the point, however, GGCT purports to speak to a concept that is foundational to the way a person understands their reality and the preferences they hold for social relations. Grid-Group Cultural Theory does discuss a process by which an individual's GGCT orientation can be changed. However, this change occurs only after a "cumulative impact of successive anomalies or surprises" (Thompson, Ellis, and Wildavsky 1990, 69; see also, Mamadouh 1999 p. 397) demonstrates that their preferred arrangement of social relations fails to effectively navigate the world and its challenges. This tends to suggest that any impact that participatory mechanisms existing in LRTP/MTP would impact the GGCT orientation of individual planners only over a course of time and would likely require a failure of the social relations embedded in their worldview in multiple social, individual, and organizational contexts.

3.6.5 Response Rate

Valid responses from the survey came from 45 states and the District of Columbia. No MPOs in 6 states, Montana, North Dakota, Oregon, South Dakota, Vermont and Wyoming provided a response.

Figure 8 - Map of MPOs with Staff Responding to Survey



Map Created using http://www.amcharts.com/ - Visited States Map.

Individuals in 192 of the nation's MPOs were invited to participate in the survey. Responses were received from 158 of the MPOs or 80.61% of those MPOs contacted. The American Association for Public Opinion Research (AAPOR) has developed guidelines for classifying the response rate for Internet surveys. One important distinction that is required for an accurate calculation of this rate is whether a survey instrument was returned with complete information or, if only partially completed, the information provided was sufficient for the purposes of the study. A survey was considered complete if all questions were answered. In this research, a survey is considered partially complete if the respondent provided information regarding both their choice of participation mechanisms, provided their rank-order preferences, other factors associated with planning for public participation, and completed the GGCT assessment questions. Those who did not return the survey, by indicating they did not wish to participate were coded as explicit refusals. Those individuals who did not respond were coded as having an unknown eligibility. Using the response rate calculator devised by the American Association for

Public Opinion Research (AAPOR), the total number of completed surveys was 443, with 134 refusals and break offs. Another 1,324 were coded as having unknown eligibility, leading to an overall response rate of 23.3%. The cooperation rate, or "the proportion of all cases interviewed of all eligible units ever contacted" (AAPOR 2008, p. 4), for this study was 0.768. The refusal rate, or the proportion of instances in which the contacted party refused to participate, or ceases their participation before the completion of the interview, was 0.07. Finally, the contact rate 0.304, which describes the proportion of contact attempts which resulted in reaching the targeted individual.

Interpreting the results of the survey, therefore, should be undertaken with several limitations in mind. First, the results are not generalizable to groups outside of the planning staff in MPOs serving a population larger than 200,000. Second, the number of respondents who broke off their participation (most noticeably, once GGCT questions were introduced) raises some questions about response bias, specifically since the number of individuals who completed the survey who were classified as egalitarians (223) was a much larger group than either the individualists (89), hierarchists (77), or fatalists (8). It is not possible to say, therefore, if egalitarians are actually more present in these MPOs, whether they are simply more likely to consent to participating in studies of this nature, or whether egalitarians may be more likely than others to pursue careers in planning[4]

An error in the execution of sending emails to the identified individuals led to three *invitations* being sent to targeted respondents instead of a single invitation and two *follow-up* reminders. This mistake had several practical consequences. The reminder function built into *Qualtrics* would have identified those individuals who had completed the survey, and ceased

[4] Thanks to Dr. Laura S. Jensen for pointing out this final possibility to me.

sending them emails. However, since each of the emails that I sent was an invitation, this meant that even those respondents who had completed the survey after the first invitation were sent follow up emails. Therefore, only those individuals who contacted me by email were removed from the email listing.

One final note on the deletion of respondent data, one that has a greater effect on the ability of this research to test its hypotheses, relates to the elimination of the five fatalist respondents. Owing to the extremely small number of respondents demonstrating a fatalist worldview, it became impossible to test the hypothesis related to fatalists, because their small numbers made inclusion in logistic regression inadvisable (Agresti 2007). As a result they were removed from the analysis. As a result of removing the above cases, the data set was reduced to $n = 398$. After categorizing the respondents' following Jones (2010), the following frequencies for GGCT worldview were found in the data. While there are far more egalitarians than any of the other GGCT types, there are enough of each type for statistical tools to be applied to explore the data.

3.7 Summary Statistics for Independent Variables

3.7.1 Egalitarian Scores

The scores computed for the Egalitarian GGCT scores were analyzed using SPSS 20.0 (Analyze > Descriptive Statistics > Frequencies) to generate the basic descriptive statistics found in Table 6. It is important to keep in mind that the reported results reflect the scores for all of the respondents to the survey, not just those classified as egalitarians. It is also important to note that the significant value for the Shapiro-Wilk statistic (.001; $p < .05$) indicates that these data are not normally distributed (Field 2009, p. 144). This non-normality makes conducting a traditional

linear regression analysis problematic, and informs this dissertation's selection of multivariate logistic regression as the analytic technique of choice.

Table 8 - Egalitarian Descriptive Statistics

Statistics

N	Valid	398
	Missing	0
Mean		10.5289
Std. Deviation		15.78731
Skewness		-.180
Std. Error of Skewness		.122
Kurtosis		-.625
Std. Error of Kurtosis		.244
Minimum		-29.00
Maximum		45.50

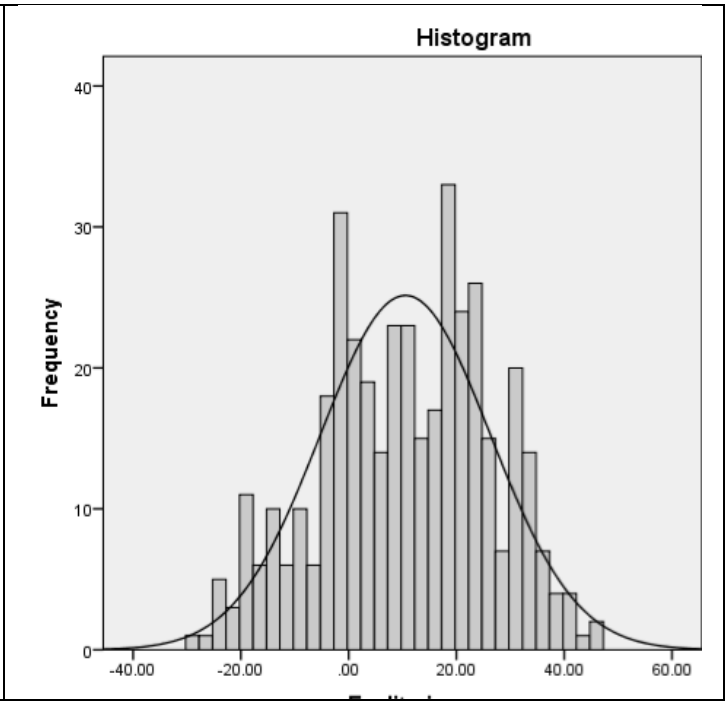


Table 9 - Egalitarian Score Tests for Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Egalitarian	.065	398	.000	.987	398	.001
a. Lilliefors Significance Correction						

3.7.2 Individualist Characteristics

Planners with an individualist Grid-Group Cultural Theory worldview represented a smaller number of respondents than did egalitarians. There were 89 individuals who could be identified as holding an individualist GGCT worldview. As with the data for the egalitarian descriptive statistics, the data for individualist scores are not normally distributed ($p > .05$).

Table 10 - Individualist Score Descriptive Statistics

Statistics

N	Valid	398
	Missing	0
Mean		1.3731
Std. Deviation		11.67387
Skewness		.455
Std. Error of Skewness		.122
Kurtosis		.053
Std. Error of Kurtosis		.244
Minimum		-27.00
Maximum		41.00

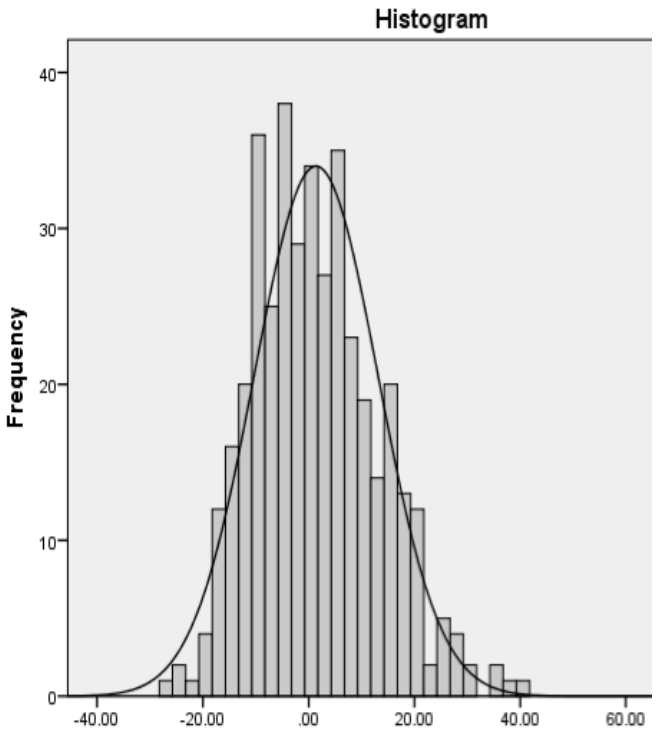


Table 11 - Individualist Score Test for Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Individualist	.052	398	.012	.985	398	.001
a. Lilliefors Significance Correction						

3.7.3 Hierarchist Characteristics

Employing the same procedure for classifying respondents' as described in section 3.6.3 (above), 77 individuals were identified as holding a hierarchist worldview. As with the individualist and egalitarian variables, the hierarchist worldview demonstrated a non-normal distribution. The distribution of values in the hierarchist worldviews seems to display a narrower range of values than either the individualist or egalitarian orientation. Hierarchist scores range from a minimum value of -26.0 to 33.5. However, individualist scores range from -27.0 to 41.0 and egalitarian scores from -29.0 to 45.50.

Table 12 - Hierarchist Score Descriptive Statistics

Statistics

N	Valid	398
	Missing	0
Mean		-.5063
Std. Deviation		11.45347
Skewness		.424
Std. Error of Skewness		.122
Kurtosis		-.135
Std. Error of Kurtosis		.244
Minimum		-26.00
Maximum		33.50

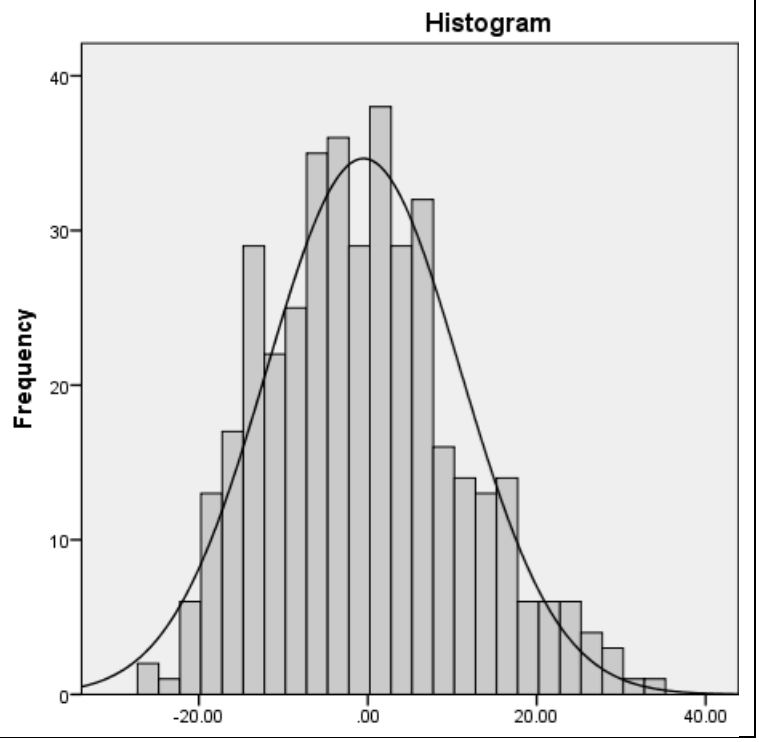


Table 13 - Hierarchist Score Test for Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Hierarchist	.055	398	.006	.984	398	.000
a. Lilliefors Significance Correction						

3.7.4 Fatalist Characteristics

While the small number of respondents classified as holding a fatalist worldview is too low (eight respondents) to include fatalists in the multinomial logistic regression, the number is sufficiently large to conduct independent samples *t-tests*, to test the hypothesis that fatalists use fewer mechanisms compared to planning staff holding other GGCT worldview types. While the results of the *t-test* will be presented in the following chapter, the descriptive statistics for fatalist

scores are presented below. We can see, as with the other GGCT worldviews variables, that the distribution of the fatalist scores is non-normal.

Table 14 - Fatalist Score Descriptive Statistics

Statistics

N	Valid	398
	Missing	0
Mean		-11.3957
Std. Deviation		9.10752
Skewness		.429
Std. Error of Skewness		.122
Kurtosis		.187
Std. Error of Kurtosis		.244
Minimum		-34.50
Maximum		20.00

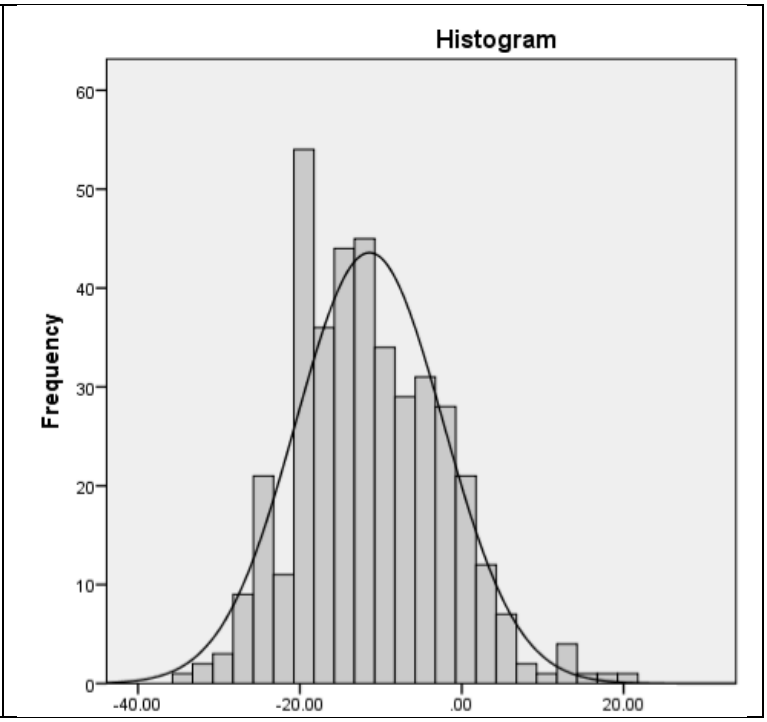


Table 15 - Fatalist Score Test for Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Fatalist	.066	398	.000	.986	398	.001
a. Lilliefors Significance Correction						

Table 16 - GGCT Worldview Frequencies

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Egalitarian	227	57.0	57.0	57.0
	Individualist	88	22.1	22.1	79.1
	Hierarchist	75	18.8	18.8	98.0
	Fatalist	8	2.0	2.0	100.0
	Total	398	100.0	100.0	

3.8 Summary Statistics for Control Variables

Examining the characteristics of the non-GGCT independent variables, the standard deviations indicate that variation does indeed occur between the respondent's choices on the survey instrument. The variables also demonstrate some instances of non-normal distributions in the data. For instance, the variable *LimitLit*, which sought to explore how important limiting potential litigation was in the design of the public participation program to planners demonstrated the largest positive skew (.601) among the independent variables, and the *NeedComInput*, which assessed the importance that the need for community input had on the planner's choice of mechanisms evinced the largest negative skew (-1.292). While these data are not normally distributed, the relatively large sample size, greater than 360 respondents for these questions, tends to mitigate much of the damage done to the statistical inferences drawn from these data (Hair, Black, Babin, Anderson, and Tatham 2006, p. 81)

For heteroscedasticity, Levene's test was employed (SPSS 20.0) to evaluate the equality of variance between the independent variables and the dependent variable. Substantial heteroscedasticity is evident between many of the independent variables and the dependent variables (see Table 16). This indicates that the dependent variables must be transformed to meet the assumptions required for multivariate linear regression (Hair et al. 2006, pp. 84-85). To attempt to correct for the negative skew in the three dependent variables, it was necessary to transform the dependent variables (by taking the square of the term) to better approximate a normal distribution (Hair et al. 2006, p. 90).

Table 17 - Results of Levene's Test Pre-Transformation

IV Name	PARTScore Score/Sig.		COMMScore Score/Sig.		PWRScore Score/Sig.	
Sex	3.014	.083	.102	.750	1.076	.300
GGCT	1.523	.219	2.574	.078	3.598	.028*
Education	Constant when = High School/GED is omitted		Constant when = High School/GED is omitted		Constant when = High School/GED is omitted	
Influence	4.512	.001*	3.188	.014*	3.780	.005*
ProjectType	4.828	.001*	4.032	.003*	4.900	.001*
EnvJustIssues	7.704	.000*	4.744	.001*	6.642	.000*
LimitLit	1.154	.331	1.316	.263	1.809	.127
LevelofContro	3.027	.018	1.976	.098	3.613	.007*
AgencyPriorities	1.829	.123	.660	.620	1.386	.238
NeedComInput	9.874	.000*	8.747	.000*	10.183	.000*
LegalRequire	4.202	.002*	2.919	.021*	4.157	.003*
SafetyIssues	5.255	.000*	4.730	.001*	6.225	.000*
Budget	2.217	.067	1.384	.239	2.52	.041*
PoliticalPriorities	1.648	.162	1.135	.340	2.881	.023*
ProjectSchedule	2.309	.058	1.252	.288	2.764	.028*

Following the squaring of the dependent variables, the number of variables demonstrating heteroscedasticity fell substantially (see Table 17) but still violated the assumptions of multivariate linear regression. Therefore, the choice was made to employ a multinomial logistic regression analysis.

Table 18 – Results of Levene's Test Post-Transformation

IV Name	PARTScore Score/Sig.		COMMScore Score/Sig.		PWRScore Score/Sig.	
Sex	.201	.655	.097	.756	.218	.641
GGCT	.803	.449	5.299	.005*	5.734	.004*
Education	Constant when = High School/GED is omitted					
Influence	2.258	.063	1.345	.253	1.616	.170
ProjectType	1.961	.100	1.278	.278	2.187	.070
EnvJustIssues	3.049	.017*	1.616	.170	3.145	.015*
LimitLit	.616	.651	1.897	.110	.640	.634
LevelofContro	1.397	.235	1.671	.156	1.039	.387
AgencyPriorities	.927	.448	.287	.887	.305	.874
NeedComInput	2.200	.069	1.004	.405	1.693	.151
LegalRequire	1.923	.106	.579	.678	1.308	.267
SafetyIssues	1.524	.195	1.204	.309	3.004	.019*
Budget	.685	.603	.576	.680	1.713	.146
PoliticalPriorities	.458	.766	.828	.508	2.021	.091
ProjectSchedule	.611	.655	.245	.913	.599	.663

3.9 Dependent Variable Transformation

As the goal of the dissertation is to test whether knowledge of a planner's GGCT worldview improves our ability to predict their preference for public participation mechanisms, the formulations of the hypotheses are conceived in terms of "high," "mid-range," and "low" effect along each of Fung's three dimensions. To operationalize the dependent variables, therefore, each was broken into three levels using SPSS. Recall that mapping the three dimensions of the selected participatory mechanisms onto Fung's Democracy Cube created the dependent variables. These variables represented the total score associated with the mechanisms selected by respondents in the survey. However, as certain respondents did not select all ten mechanisms (the maximum number of mechanisms allowed), the variables were adjusted by dividing the total score for each mechanism by the number of mechanisms selected, to reflect that certain respondents selected fewer mechanisms. Thus, if a respondent's total score for six mechanisms

on the *Participant Dimension* summed to 30, this score was divided by six to yield an adjusted score of 5.0.

However, the range of generated scores presented problems for more traditional multivariate analysis methods. Principally, the distribution of several of the independent variables was heteroscedastic and the relationship to the dependent variables violated the assumption of homoscedasticity inherent in multivariate linear regression. An attempt was made to use the square of the terms (Hair et al. 2006, p. 90) to correct for this problem, yet even after the transformation those problems remained. To bypass this obstacle, the dependent variables were transformed into categorical variables to allow application of multinomial logistic regression, which doesn't require homoscedasticity (Field 2009, p. 273). The details regarding the transformation of the dependent variables are contained in Table 17.

Table 19 - Transformation of Dependent Variables

Creating the Categorical Variables		
TotalPARTScoreAdj	Old Values	New Value
Becomes	Lowest – 5.99999	1 (Low)
TotalPARTScoreLMH	6.00000 – 6.40000	2 (Mid-Range)
	6.40001 – Highest	3 (High)
TotalCOMMScoreAdj		
Becomes	Lowest – 4.59999	1 (Low)
TotalCOMMScoreLMH	4.60000 – 5.00000	2 (Mid-Range)
	5.00001 – Highest	3 (High)
TotalPWRScoreAdj		
Becomes	Lowest – 3.99999	1 (Low)
TotalPWRScoreLMH	4.00000 – 4.22220	2 (Mid-Range)
	4.22221 – Highest	3 (High)

3.10 Exploratory Factor Analysis (EFA) and Scale Construction

The relatively large number of items on the survey instrument made performing an exploratory factor analysis (EFA) on the responses an important step in model development. Exploratory

factor analysis is a procedure that helps to produce "a model from a relatively large set of latent constructs" (Williams, Brown and Onsman 2010, p. 3). The size of the sample in this study, N = 398, falls somewhat above the "good" category established by Comrey (1973) relating to its suitability for EFA. To insure that the survey data are appropriate for EFA, the Kaiser-Meyer-Olkin (KMO) Measure for Sampling Adequacy was conducted. As Williams et al. (2010) note, the KMO result should exceed .50 and, in the current data, this condition is met, with the Kaiser-Mayer-Olkin Measure of Sampling Adequacy reported by SPSS (Analyze > Dimension Reduction > Factor) being .772. A second test that is required to assess the data's suitability for EFA is the Bartlett's Test of Sphericity. The test should be significant ($p < .05$) and in this case, the test reports a value of .000, which satisfies the requirement. The EFA was accomplished by using a VARIMAX rotation, which resulted in the identification of six factors with Eigenvalues greater than one, suggesting these be retained for analysis. Three of these factors, (three, four, and five in Table 5) emerge from the GGCT worldviews of Egalitarian, Hierarchist, and Individualist.

Table 20 - KMO Test and Bartlett's Test Result

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.772
Bartlett's Test of Sphericity	Approx. Chi-Square	1980.068
	df	231
	Sig.	.000

Table 21 - Factor Analysis Rotated Component Matrix

	Component					
	1	2	3	4	5	6
Budget	**.732**	.004	.100	-.009	.029	.044
ProjectSchedule	**.665**	.119	-.002	.178	-.173	.036
PoliticalPrior	**.641**	-.187	.015	.027	-.053	.361
ProjectType	**.615**	.133	-.122	-.119	.125	.200
SafetyIssues	**.590**	.275	-.014	-.092	.351	.143
AgencyPrior	**.576**	.361	.097	.102	-.092	-.010
NeedCommunityInput	.256	**.716**	.054	-.003	-.030	.042
EnviroJustice	.181	**.666**	-.013	-.120	.104	.228
FataRandomChance	.142	-.568	.234	.011	.112	.120
LegalRequire	.235	**.539**	.084	.199	-.095	.263
EgalFairnessRev	.108	-.071	**.789**	-.191	-.045	-.109
EgalReduceInequal	.024	-.134	**.780**	-.256	-.150	.052
EgalSharePwr	-.059	.098	**.748**	.069	-.048	.036
IndvSucceedonOwn	.010	.019	-.271	**.690**	.204	.045
IndvMakeOwnWay	.067	.156	-.031	**.684**	.185	.041
IndvCompete	-.087	-.023	-.061	**.535**	.218	.177
FataPointlesstoPlan	.142	-.389	.018	.514	-.136	-.082
HierTroubleDisobey	-.043	-.081	-.137	.158	**.749**	-.060
HierWorkHardObey	.030	.058	-.015	.212	**.739**	.077
HierSwiftPunish	.025	-.169	-.142	.448	**.517**	-.090
LevelContro	.307	.039	.041	.025	-.016	**.796**
LimitLitigation	.117	.235	-.057	.135	.016	**.790**

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 7 iterations.

The results of the EFA suggest that many of the items can be understood as expressing underlying concepts. In the case of the first factor, for example, we can see that each of the items relates to the more technical aspects of plan development. This means that the budget that is associated with the LRTP, as well as the schedule and priorities of the agency (and its policy board) are all related. We can think of these first items as representing the contextual factors that

are *internal* to the agency's planning process. The second factor loading scores indicate *externally* imposed requirements (such as Title IV of the Civil Rights Act of 1964 and Federal Guidance requiring public participation are also legal requirements). It should be noted that one of the fatalist items loads onto this score and is negatively related (-.568). As the main thrust of this dissertation is to test the use of GGCT in helping to predict the selection of public participation mechanisms, this item is not incorporated into the scale, but is retained instead in the Fatalist measure. The sixth factor has high loadings for the two items, which suggest possible consequences for plan development as considerations for the planner, with the level of controversy (*LevelContro*) and the desire to limit potential litigation (*LimitLitigation*).

To test for scale reliability, Cronbach's Alpha was computed using SPSS (Analyze > Scale > Reliability Analysis). Generally, a scale is viewed as reliable if the value of Cronbach's Alpha exceed .7, however Hair et al. indicate that retaining a scale of higher than .6 is acceptable in exploratory research (2009, p. 139). In the case for each of the scales, the threshold for exploratory research was met, with the Cronbach's Alpha for the *Internal Considerations Scale,* the *External Requirements Scale*, and the *Potential Consequences Scale* being .752, .649, and .680, respectively. After the extraction of these factors, a scale was constructed for the *internal MPO considerations*, the *legal requirements,* and the *potential consequences*. To compute these scales, the average of the items were taken as recommended by Hair et al. (2009).

Table 22 - Descriptive Statistics for Final Control Variables

	Valid N	Mean	St. Dev.	Min	Max
InternalMPOConsider	381	3.33	0.762	1.00	5.00
ExternalRequire	388	3.85	0.806	1.00	5.00
PotentialConsequence	385	2.37	0.975	1.00	5.00
PercentPubTrans	398	4.70	6.471	0.00	58.00
PercentWhite	398	80.21	12.128	25.00	97.90

3.11 Conclusion

This chapter has laid out the development of the study, the theoretical framework, research design, and method of inquiry pursued. The three models have been constructed to take into account the independent variables of particular interest to this study, namely the GGCT worldviews. The chapter sought to explain how these variables were derived from the survey questions, and discussed the formula applied for placing individual respondents into specific categories. The chapter also sought to explain how the dependent variables were constructed and the transformations and recoding that were undertaken before arriving at their final categorical form. In addition to these variables, the chapter discussed the construction of several scales that included variables that the literature indicated were essential to include to control for additional factors in the decision process for designing a public participation process. The chapter also reviewed the shape and characteristics of the data, and how it impacted the selection of the method of analysis. Taken as a whole, the three models (and the variables they contain) seek to use the binary version of the GGCT variable to test the hypotheses that knowing a particular planner's GGCT worldview can help improve predictions regarding the likelihood that a respondent will choose a collection of mechanisms that conform to high, mid-range, or low values on Fung's three dimensions. The next chapter reports the findings of the statistical tests on the hypotheses.

Chapter 4: Results

4.1 Introduction

This chapter presents the results of several statistical tests that are aimed at assessing the relationship between the primary independent GGCT variables and the scores generated by mapping the selected participatory mechanisms onto Fung's Democracy Cube. The results are presented in order from the most simple to the most complex. Following this logic, the chapter will first report the results of independent t-tests exploring the difference in means between the GGCT worldviews and specific selected mechanisms. This is an important step in the logic of this analysis, as these differences deal directly with the mechanisms selected by survey respondents as opposed to the more advanced explorations that use the mapped values informed by Fung's Democracy Cube. Bivariate correlations between independent and dependent variables follow next. The chapter will then discuss the use of exploratory factor analysis as a data reduction strategy to simplify the final model to be used in the regression analysis. Finally, the results of the three multinomial logistic regressions (one for the each of the three dimensions) are reported.

4.2 *T*-Tests

Using SPSS 20.0, independent samples *t-tests* were run to identify any significant differences between the GGCT worldviews of respondents and the public participation mechanisms they preferred. To accomplish this procedure the mean scores for each of the 44 mechanisms (indicated as a binary choice on the survey instrument) were compared between egalitarians and individualists. Means with statistically significant differences are reported in Table 22.

Table 23 - Egalitarian vs. Individualist T-Test

Mechanism	Difference of Means Significance	Egal. Mean	Indiv. Mean
Multilingual Translations	.020	**.2599**	.1477
Targeted Newspaper	.043	**.0485**	.0114
Press Release	.019	.1189	**.2386**
Visioning	.000	**.4670**	.2386
Visual Preference Survey	.026	**.2115**	.1136
Sig. $p < .05$[5] Equal Variances are not assumed in any of the reported *t-test* results.			

Based on these data, we can see that there are, across several of the participatory mechanisms statistically significant differences between the means for egalitarians and individualists. It appears that egalitarians are more likely to prefer multilingual translations, visioning exercises, and visual preference surveys than are individualists. On the other hand, they are less likely to choose press releases, flyers, and outreach to local public information officers than individualists. These differences can be understood in several ways. First, egalitarians can be understood to prefer the visioning exercise because "it is democratic in its search for disparate opinion from all stakeholders and directly involves a cross-section of constituents…It looks for common ground among participants in exploring and advocating strategies for the future" (FHWA n.d., p. 144). This description conforms to egalitarians theorized preference for "high participation structures in which every decision is 'up-for-grabs' (Hood 1998, p. 9) and the desire

[5] Relaxing the alpha level to $p < .10$ adds a number of other mechanisms that demonstrated significant differences including: Games (.060); Public Meeting (.060); Special Transportation to Meetings (.074); Project Specific Website (.085); Flyers (.063); Outreach to Public Information Officers (.061). Egalitarians prefer Games, Special Transportation to Meetings, and Project Specific Websites, while planners with an individualist worldview tend to go for Public Meetings, Flyers, and Outreach to Public Information Officers. Games and Special Transportation to meetings, in keeping with their tendency to build groups make sense for egalitarians to support over individualists. A similar understanding might follow for project specific websites, as it would tend to bring people into the planning process by organizing community response around a particular project or issue than might a general web site. Individualist preferences for Flyers and Public Meetings is also understandable in the sense that it allow individuals to choose to become more involved or not and functions to disseminate information to individuals without a focus on groups. Why individualists prefer Outreach to Public Information Officers is unclear, however.

to craft a process that reaches decisions "through the formation of collective will by a full consensus" (Ney and Verweij 2014, p. 627). Indeed, the FHWA identifies that Visioning "presents a democratically-derived consensus" (n.d. p. 144). These characteristics, then, can help us to understand why egalitarians are likely to prefer Visioning as a mechanism. However, it is also essential to understand why individualist planners are less likely to select this mechanism. The goal of Visioning on crafting a democratic consensus that guides the agenda of the public agency is probably not too attractive to individualists because they are more interested in processes that allow for an aggregation of pre-existing preferences since their bias toward market systems would reinforce an antipathy toward mechanisms that sought to develop a conception of the common-good, as a concept distinct from the sum of individual preferences. This approach to public participation can be understood as being informed by a public choice approach as articulated by Buchanan. Mueller characterizes Buchanan's view by stating "collective action outcomes simply emerge from the individual choices of the participants in the democratic process. The normative justification for accepting the collective choices stems from the fact that the citizens have chosen the rules of the political game, and abide by them" (Mueller 2015, p. 380). This means that the egalitarian desire to construct a common good through procedural means that stands outside (or at least as a supplement to) the mainstream political process, which also relies on group consensus is doubly odious to individualists.

Multilingual translations, falls higher on the participants dimension (Open, Self-Selected; 7 on the participant scale) than theorized, however it isn't too difficult to grasp that egalitarians appreciate the need to open the process to those seen as disenfranchised by the "system." As Douglas and Wildavsky point out, the egalitarian "view does not tolerate inequality in any form: its big promise is to introduce equality all around" (Douglas and Wildavsky 1982, p. 177).

Therefore, making certain that non-English speakers can consume information about the MPO and its plans in their native language is a fundamental question of fairness to egalitarian planners and it is the duty of the agency to facilitate the consumption of information. Individualists, on the other hand, might place the onus on the individual to translate the MPO documents, relying on self-interest to motivate this behavior.

To understand why individualists are likely to prefer flyers, press releases, and involving Public Information Officers, it might be illuminating to understand that these are all mechanisms that "help people decide to participate" (FHWA n.d., p. 58), which locates the decision squarely with the individual, not the agency. In this view, the agency is merely providing information to citizens, not trying to either construct a group (as egalitarians would prefer). It is also important to note that this mechanism is also mapped "high" on the participant dimension, which is in line with the GGCT guided theorizing about mechanisms preferred by individualists.

Table 24 - Egalitarian vs. Hierarchist T-Test

Mechanism	Difference of Means Significance	Egal. Mean	Hier. Mean
Individual/Small Group Briefings	.014	**.2731**	.1467
Press Release	.005	.1189	**.2800**
Public Meeting	.002	.3480	**.5600**
Sociocultural Effects Analysis	.032	**.0573**	.0133
Special Transportation to Meetings	.018	**.1762**	.0800
Phone Survey	.047	**.1410**	.0667
Visioning	.000	**.4670**	.2000
Visual Preference Survey	.007	**.2115**	.0933
Email Notices	.001	.2247	**.4533**
Newspaper Featured Story	.007	**.3040**	.1600
Sig. $p < .05$[6] Equal Variances are not assumed in any of the reported *t-test* results.			

[6] Relaxing the alpha level to $p < .10$ adds a number of other mechanisms demonstrated significant including: Charettes (.064); Simulation (.052); Videos (.055).

When comparing the means for mechanisms selected by egalitarians to those selected by hierarchists, differences in certain mechanisms are evident. Similar to the comparison to individualists, egalitarians are less likely to select press releases than are hierarchists. Additionally, they are less likely to choose public meetings. However, egalitarians are more likely to select individual/small group briefings, sociocultural effects analysis, special transportation to meetings, visioning, visual preference surveys, and newspaper featured stories than are hierarchist planners at MPOs.

The hierarchist preference for press releases can be understood as the professional planning staff at the agency communicating to the public opportunities to provide input into a process, perhaps by announcing a public hearing or merely announcing that a plan is under development. This type of communication relies on established institutions in society (the press) to carry messages to the public announcing opportunities for the public to provide their input since hierarchists "have little faith in immanent self-organizing or self-steering processes" (Hood 1998, p. 73).

The egalitarian preference for visioning exercises was covered in the previous section, but their inclination to choose to select individual/small group briefings, sociocultural effects analysis, special transportation to meetings, visual preference surveys, and newspaper featured stories deserves some exploration here. It seems that individual/small group briefings and special transportation to meetings both aim at helping egalitarians to create a group, which can meet and engage in face-to-fact interactions. Their preference for sociocultural effects analysis seems to reflect the fact that conducting such an analysis requires a compilation of a "list of community resources relevant to the sociocultural issue, associated project buffer (if applicable), and level of importance (e.g., high, medium, low) as determined through public input" (FDOT 2011, p. 8-1).

Here, we see that the public input is driving the process of the evaluation, a key factor for egalitarians.

Egalitarian preference for visual preference surveys and newspaper featured stories is, however, more puzzling, as both of these mechanisms are higher on the participant dimension (7 and 8, respectively) than hypothesized. Additionally, both are higher (5 and 6) on the Communication and Decision Mode Dimension than is theorized. Finally, they are also higher (4 and 5) on the Power and Authority Dimension, than egalitarians are hypothesized to prefer. One possible explanation for the attraction for egalitarians, at least so far as newspaper featured stories are concerned, is that the egalitarian planner is interested in creating groups with a shared conception of the problem which are committed to generating a consensus-based solution. It is possible that by enlisting the newspaper to write a compelling story on the problems that the MPO is wrestling with in their planning process, egalitarians anticipate the story galvanizing individuals to come together to discover a solution. The data collected by this dissertation cannot answer this question and future research regarding the content of featured stories would be required to explore the possibility.

The final comparison, between individualists and hierarchists, reveals fewer differences. Individualists chose individual/small group briefings more than did hierarchists. However, hierarchists were more likely to prefer videos than were individualists. To understand why hierarchists might prefer videos, we need only understand that videos are presentations that flow from the experts to the public. The creation and dissemination of a video takes skill and expertise (though less now than it used to with the advent of cheap recording devices and access to internet hosting sites like YouTube) and requires only that the public pay attention to the vision, facts, and images presented by the authorities. Egalitarians would claim that this type of participation

mechanism doesn't qualify as "authentic" participation as it fails to engage in "rethinking of the underlying roles of, and relationships between, administrators and citizens" (King, Feltey and Susel 1998, p. 317).

Table 25 - Individualist vs. Hierarchist T-Test

Mechanism	Difference of Means Significance	Indv. Mean	Hier. Mean
Videos	.040	.1250	**.2533**
Sig. $p < .05$[7] Equal Variances are not assumed in any of the reported *t-test* results.			

These initial t-tests suggest that egalitarian preferences may be substantially different from either individualists' or hierarchists'. To follow up on this possibility, an additional *t*-test was conducted comparing egalitarians to non-egalitarians (individualists, hierarchists, and fatalists), which confirmed such differences. These differences indicate, not surprisingly, that egalitarians prefer mechanisms that allow groups to come together under the auspices of mechanisms that display a structure that is not overly prescribed so far as the roles and rules that participants must follow (Charettes, Simulating Project Alternatives, Sociocultural Effects Analysis, Visioning). They also seem to prefer going out of their way to accommodate those who need special consideration to participate as equals in the planning process (Multilingual Translations and Special Transportation to Meetings). They are less likely to choose those mechanisms where the participation is overly formal (Public Meeting), or those that place the majority of the emphasis on simply disseminating information from the agency to the public (Press Release, Flyers, Email Notifications). However several of the mechanisms egalitarians prefer don't immediately lend themselves to easy explanation using GGCT as a framework (Visual Preference Surveys and Newspaper Featured Stories).

[7] Relaxing the alpha level to $p < .10$ adds a number of other mechanisms demonstrated significant including: Newsletters (.087); Email Notices (.056); Other Social Media (.074)

Table 26 - Egalitarian vs. Non-Egalitarian

Mechanism	Difference of Means Significance	Egal. Mean	Non-Egal. Mean
Charettes	.047	**.3040**	.2164
Multilingual Translations	.019	**.2599**	.1637
Press Release	.001	.1189	**.2515**
Public Meeting	.001	.3480	**.5146**
Simulate Project Alternatives	.033	**.2775**	.1871
Sociocultural Effects Analysis	.032	**.0573**	.0175
Special Transportation to Meetings	.025	**.1762**	.0994
Visioning	.000	**.4670**	.2281
Visual Preference Survey	.003	**.2115**	.1053
Flyers	.027	.0529	**.1170**
Email Notifications	.003	.2247	**.3626**
Newspaper Featured Stories	.033	**.3040**	.2105
Sig. $p < .05$ Equal Variances are not assumed in any of the reported *t-test* results.			

4.2.1 Comparison between Fatalists and Others for number of mechanisms

Since this section deals extensively with *t*-tests, it seems appropriate to explore the results of a *t*-test designed to test for support for H10, which seeks to test whether fatalists would choose fewer participatory mechanisms than the planning staff categorized as holding another GGCT worldview. The results of the *t*-test do not support the hypothesis, as the mean for fatalist planning staff is 9.00 and for the mean for non-fatalists is 9.10 (significance .857, $p < .05$). This means that H10 is not supported by the data, and that fatalists seem to select just as many mechanisms as do the other planners. Additionally, fatalists are not more likely to select public meetings, visioning exercises, or posting information on public websites than are the planners holding the other GGCT worldviews.

4.3 Correlation between GGCT Worldview and Dependent Variables

To assess the potential relationship between the primary independent variables (GGCT worldviews) and the dependent variables in this study, a bivariate correlation matrix was constructed using SPSS 20.0 (Analyze > Correlate > Bivariate). The results of this exploration are presented in Table 26, but attention should be paid to the relationship between Egalitarian, Hierarchist, and Individualist GGCT worldviews and the *Communication and Decision-Making* and *Power and Authority Dimensions*. It is also important to note that no relationship was detected between any of these independent variables and the *Participant Dimension* scores. This lack of association suggests that the hypothesized relationships between GGCT worldviews and variations in the participants dimension are not supported by the data. Examining the negative skewness of the distribution (-.542) divided by the Standard Error of Skewness (.122) yields a result -4.84, which might indicate that since the data lean toward mechanisms with high scores (Cramer & Howitt 2004), it might be more difficult to find any differences owing to the concentration of mechanisms that employ high values over those with low, and mid-range values (see Table 33 for a complete breakdown of the mechanisms by participant score).

Table 27 - Bivariate Correlations Between Independent and Dependent Variables

		Egalitarian	Individualist	Hierarchist	Fatalist
PARTScoreLMH	Pearson Correlation	-.085	.028	.085	-.021
	Sig. (2-tailed)	.091	.579	.089	.673
	N	398	398	398	398
COMMScoreLMH	Pearson Correlation	-.225**	.115*	.187**	-.068
	Sig. (2-tailed)	.000	.022	.000	.176
	N	398	398	398	398
PWRScoreLMH	Pearson Correlation	-.168**	.111*	.119*	-.069
	Sig. (2-tailed)	.001	.026	.017	.172
	N	398	398	398	398
** Correlation is significant at the 0.01 level (2-tailed) * Correlation is significant at the 0.05 level (2-tailed)					

These correlations suggest that there is a relationship between three of the four GGCT worldviews and the outcome for two of the three dependent variables. Given these correlations, a further investigation of the relationships with more sophisticated methods is appropriate.

4.4 Correlation between Independent and Control Variables

In addition to the primary GGCT worldview variables, there are several other control variables that are included in the model. These variables are included to reflect factors that are both personal to the planning staff surveyed (sex and educational attainment) as well as several factors associated with the context in which the MPO finds itself. These contextual factors include the influence the respondent subjectively feels they have on the design of the process, the homogeneity of the metropolitan statistical area in which the MPO exists (operationalized as the percentage of the population which is Caucasian, and the percentage of the population that reports using public transportation as their primary mode of transportation). The rationale for including these variables in the model is that previous research on public participation has found that certain types of people are more likely to participate in public involvement activities (Bickerstaff and Walker 2005) and that they tend to be white, educated, and more affluent. The inclusion of the percentage of the population using public transportation is included because it is reasonable to assume that a large percentage of the population using publicly provided methods of transportation is likely to affect the approach that planning staff might take to the development of participatory mechanisms.

To make certain that no unacceptably high correlations are present between the primary independent and control variables, a correlation matrix has been constructed and is included below, in Table 27. To assess the possibility of multicollinearity among the predictor variables (both independent and control), bivariate correlations were examined. The presence of

multicollinearity between variables can affect the ability of the model to detect the effect that any variable has on the outcome. The highest correlation exists as a negative relationship between Egalitarian and Individualist Grid-Group Cultural Theory worldviews at -.614. As Menard (1995) notes, values greater than .8 in logistic regression models may yield model results that are inappropriately inflated.

Table 28 - Independent Variable Bivariate Correlations

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
Egalitarian (a)	1	***-.614***	***-.555***	***-.165***	-.057	-.013	-.068	.080	-.036	-.032	***.216***
Individualist (b)	***-.614***	1	***-.257***	-.076	**.103**	.080	.092	-.083	.057	.043	**-.105**
Hierarchist (c)	***-.555***	***-.257***	1	-.069	-.053	-.062	-.018	-.017	-.025	-.031	***-.142***
Fatalist (d)	***-.165***	-.076	-.069	1	.045	-.018	.019	.009	.030	.073	-.053
InternalMPOCon (e)	-.057	**.103**	-.053	.045	1	***.416***	***.428***	-.031	-.008	-.086	-.034
ExternalRequire (f)	-.013	.080	-.062	-.018	***.416***	1	***.391***	-.069	-.002	-.050	.014
PotentialConseq (g)	-.068	.092	-.018	.019	***.428***	***.391***	1	-.069	-.012	-.043	**-.108**
PercentPubTrans (h)	.080	-.083	-.017	.009	-.031	-.069	-.069	1	***-.277***	.020	.080
PercentWhite (i)	-.036	.057	-.025	.030	-.008	-.002	-.012	***-.277***	1	-.024	-.081
Sex (j)	-.032	.043	-.031	.073	-.086	-.050	-.043	.020	-.024	1	.001
Education (k)	***.216***	**-.105**	***-.142***	-.053	-.034	.014	**-.108**	.080	-.081	.001	1
***Significant at* 0.01 level (2-tailed)** **Significant at 0.05 level (2-tailed)** **N=398**											

The bivariate correlations between the primary independent variables and the control variables are not sufficiently strong enough to present serious concerns related to multicollinearity for the multinomial logistic regression that follows.

4.5 Multinomial Logistic Regression

Multinomial logistic regression is a nonlinear modeling technique, and the results of the analysis are interpreted in reference to a base category (Daley 2008). This approach allows an interpretation of the likelihood of a planner selecting a mix of mechanisms that are either are

"Low," "Mid-range," or "High," on each of the three dimensions of Fung's *Democracy Cube*. While it is not essential that the independent variables be related in a linear fashion to the dependent variable, it is important that the log of the continuous predictor variables are linearly related to the log of the categorical dependent variables (Field 2009, p. 296). The assumption of linearity of logits is tested by taking the interaction term of the natural log of each of the continuous predictor variables and the predictor itself. These interaction terms are then inserted into a multinomial logistic regression run against the natural log of the outcome variable. For the PART model, each of the five interaction terms (for PotentialConsequence, InternalMPOConsider, PercentPubTrans, PercentWhite, and ExternalRequire) reported values higher than .05, indicating that the "main effect has [not] violated the assumption of linearity of the logit" (Field 2009, p. 296). The results for the COMM model and the PWR model also report significance of more the .05, indicating that the log of the continuous variables and the log of the outcome variables are linearly related and thus meet the assumption of multinomial logistic regression.

Multinomial logistic regression also can be sensitive to cells with missing data. To check, SPSS 20.0 was used to run crosstabs (Analyze > Crosstabs) to check all predictor variables for missing cells or those with lower than 5 responses. The control variables *InternalMPOConsider, ExternalRequire, PotentialConsequences, PercentPubTrans, PercentWhite* all display some cells with missing data. The nature of continuous variables makes this outcome expected, and more important is to insure that the categorical predictor variables do not have missing cells (IDRE 2015). No cells in the *Sex*, *Egalitarian, Individualist, Hierarchist, Influence,* or *Education* categorical variables showed missing values, indicating that this requirement for multinomial logistic regression was met.

Before examining the modeling process, it is important to stress that this study has three categorical outcome variables (*PART, COMM, and PWR)*, thus requiring the testing of three different models to estimate the predictive power of GGCT worldview in relation to the structural components of public participation mechanisms. The models for each *Democracy Cube* dimension thus were developed to include each of the GGCT variables, and the control variables.

4.5.1 Participation Model

To begin the multivariate logistic regression model fitting, the predictor variables for the *Participant Dimension Model* were entered into the model (Analyze > Regression > Multinomial Logistic) using a Main Effects specification. The Main Effects specification is used because it tests "the unique effect of a predictor variable (or independent variable) on an outcome variable" (Field 2009, p. 789) and doesn't consider the interaction effects between the various predictors in the mode. This is essential in preliminary research of this type, because the goal of the study is to assess the ability of hypotheses derived from Grid-Group Cultural Theory to explain the choice of particular participation mechanisms. Future research may undertake an exploration of the interaction between GGCT worldviews and other predictor variables; however, this is outside the scope of this dissertation. The final model is not statistically significant ($p = .191$). This result is not surprising, given the lack of correlation between the independent variables and the dependent variables outlined previously in this chapter. Additionally, the goodness of fit statistics report conflicting interpretations regarding whether the model is a good fit for the data, with the Pearson statistic .258 being greater than $p < .05$, which suggests a good fit. However, the deviance statistic value .034 suggests model fit may be less than optimal. Again, given earlier indications from the bivariate correlation matrices, this result is not surprising. However, given

that there exists conflicting information on model fit, the results of the model are reported below. Pseudo R-Squared measures for this model are Cox and Snell .065 and Nagelkerke .073. Naglekerke is a more reliable measure (Burns and Burns 2009, p. 580) and indicates that the model accounts for about 7 percent of the variance in the dependent variable.

It is important to reiterate that multinomial logistic regression reports its results in comparison to a "reference" category. This means that the model reports the likelihood of an event occurring, in this case, that an individual with given characteristics would demonstrate membership in the "low," or "high" category relative to the "mid-range" category. Importantly, "since the parameter estimates are relative to the referent group, the standard interpretation of the multinomial logit model is that for a unit change in the predictor variable, the logit of the outcome relative to the referent group is expected to change by its respective parameter estimate" (IDRE 2015). None of the variables in the model demonstrate a significant prediction between "low" and "mid-range" levels in this model. However, there are (see Table 28) three statistically significant predictors in the difference between the likelihood of choosing "mid-range" over "high" values. For a single unit increase in *InternalMPOConsider* composed of responses associated with Budget, Project Schedule, Political Priorities, Project Type, Safety Issues and Agency Priorities (i.e., as respondents indicate that these factors become more important) the respondent is less likely to report a high score on the *Participant Dimension* than they are to report a "mid-range" score. This means that as these factors increase in importance, planning staff members are more likely to move toward participatory practices that are characterized by those that utilize Open w/Targeted recruitment versus merely those that rely on smaller groups of individuals (say, Professional Representatives or Lay Stakeholders).

The model suggests that as the importance of potential consequences increases by a

single unit factor (an increase of 1 point on the summed scale, meaning that the respondents answered the survey questions in a way that indicated a higher level of importance for these factors) for planning staff, they are more likely to demonstrate "high" scores on the participant with each unit increase.

Table 29 - PART Model Parameter Estimates

Parameter Estimates

Total Participant Score Adjusted Low Medium and High[a]		B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval	
								Lower	Upper
Low	Intercept	1.540	2.018	.582	1	.446			
	InternalMPOConsider	-.092	.199	.214	1	.643	.912	.618	1.346
	ExternalRequire	-.290	.182	2.532	1	.112	.748	.524	1.069
	PotentialConsequence	.128	.152	.705	1	.401	1.136	.843	1.531
	PercentPubTrans	-.027	.020	1.858	1	.173	.974	.937	1.012
	PecentWhite	-.009	.010	.736	1	.391	.991	.971	1.012
	[EgalitarianBinary=.00]	.066	.846	.006	1	.938	1.068	.203	5.610
	[EgalitarianBinary=1.00]	0[b]	.	.	0	.	.	.	.
	[IndividualistBinary=.00]	.140	.869	.026	1	.872	1.150	.209	6.316
	[IndividualistBinary=1.00]	0[b]	.	.	0	.	.	.	.
	[HierarchistBinary=.00]	.469	.883	.282	1	.596	1.598	.283	9.022
	[HierarchistBinary=1.00]	0[b]	.	.	0	.	.	.	.
	[Sex_Binary=.00]	-.169	.266	.400	1	.527	.845	.501	1.424
	[Sex_Binary=1.00]	0[b]	.	.	0	.	.	.	.
	[GradDegreeYes=.00]	-.451	.282	2.567	1	.109	.637	.367	1.106
	[GradDegreeYes=1.00]	0[b]	.	.	0	.	.	.	.
High	Intercept	1.709	2.235	.585	1	.444			
	InternalMPOConsider	**-.462**	**.199**	**5.379**	**1**	**.020**	**.630**	**.426**	**.931**
	ExternalRequire	-.095	.185	.263	1	.608	.909	.633	1.307
	PotentialConsequence	**.324**	**.154**	**4.413**	**1**	**.036**	**1.383**	**1.022**	**1.872**
	PercentPubTrans	**-.068**	**.031**	**4.703**	**1**	**.030**	**.935**	**.879**	**.994**
	PecentWhite	-.001	.011	.006	1	.936	.999	.977	1.022
	[EgalitarianBinary=.00]	-.069	.947	.005	1	.942	.933	.146	5.973
	[EgalitarianBinary=1.00]	0[b]	.	.	0	.	.	.	.
	[IndividualistBinary=.00]	-.116	.966	.015	1	.904	.890	.134	5.907
	[IndividualistBinary=1.00]	0[b]	.	.	0	.	.	.	.
	[HierarchistBinary=.00]	-.230	.969	.056	1	.812	.794	.119	5.302
	[HierarchistBinary=1.00]	0[b]	.	.	0	.	.	.	.
	[Sex_Binary=.00]	.004	.268	.000	1	.987	1.004	.594	1.698
	[Sex_Binary=1.00]	0[b]	.	.	0	.	.	.	.
	[GradDegreeYes=.00]	-.228	.279	.671	1	.413	.796	.461	1.374
	[GradDegreeYes=1.00]	0[b]	.	.	0	.	.	.	.

a. The reference category is: 2.00.
b. This parameter is set to zero because it is redundant.

Owing to the nature of the multinomial logistic regression model, we have seen only the comparisons of the "low" participant category and the "high" participant category to the "mid-

range" category. To see if any of the predictors are significant in their ability to predict the differences between comparing the "low" and "high" categories, it was necessary to rerun the model with a different (in this case "high") reference category. After running the model again with the reference group changed, no significant predictors were found in comparison between the "low" and "high" categories.

One final measure that allows for a better understanding of the predictive power of the model is the creation and examination of a classification table. A classification table compares the predicted values for a given category with the actual observed cases. The model successfully predicts membership in the "low" category 35% of the time, in the "mid-range" category 52.9% of the time, and the "high" category 36.8% of the time. To assess the usefulness of the model in predicting membership, the proportional by chance accuracy rate was calculated by summing the squared proportion of the number of cases in the "low," "mid-range," and "high" groups (Bayaga 2010). The result ($0.299^2 + .455^2 + .246^2 = 0.3569$), was then multiplied by 1.25, which is indicative of the usually accepted criteria that a model be 25% better than chance. The result for the PART model was 1.25 X 0.3569 = .4462 or 44.62% (Schwab 2002). When compared to the predictive power of the whole model of 42.1%, we can see that this model did not meet the criteria of usefulness. However, it is worth noting that while the model did not predict 25% better than chance criteria, it did offer more predictive power than chance alone (35.69% proportional by chance accuracy rate vs. 42.10% for the model).

Table 30 - Classification for Participants Model

Classification

Observed	Predicted			
	1.00	2.00	3.00	Percent Correct
1.00	43	55	25	35.0%
2.00	40	73	25	52.9%
3.00	30	44	43	36.8%
Overall Percentage	29.9%	45.5%	24.6%	42.1%

Having reviewed that statistically significance findings for the *Participant Dimension* model, it is worth noting that none of the GGCT worldview variables is found to have a significant affect on the choice of participatory mechanisms. Therefore, we cannot reject the null hypothesis and thus cannot confirm the following hypothesis:

> H1: Planners with an egalitarian GGCT worldview will select more participation mechanisms whose internal structure is characterized by mid-range scores on Fung's *Participants* dimension (from *open with targeted recruitment* to *lay stakeholders*).
>
> H4: Planners with a hierarchist GGCT worldview will select more participation mechanisms whose internal structure is characterized by low scores on Fung's *Participants* dimension (from *expert administrators* to *professional stakeholders*).
>
> H7: Planners with an individualist GGCT worldview will select more participation mechanisms whose internal structure is characterized by high-range scores on Fung's *Participants* dimension (from *everyone* to *professional stakeholders*).

Possible reasons that the GGCT worldview failed to influence the participant dimension will be discussed in chapter five.

4.5.2 Communication Model

The Communication and Decision-Making dimension model was selected using the same process in SPSS 20.0 applied to the Participants model. The results for multinomial logistic regression model are reported below. The model fit statistics for this model indicate that it is an acceptable fit. The Pearson's goodness-of-fit measure is .295 (greater than .05) and the deviance

statistic is also above the .05 level, at .081. The model itself is significant (.01 < .05) however; the Nagelkerke statistic indicates that it only manages to explain 10.6 percent of the variance (.106).

The initial comparison between "low" and "mid-range" and "high" and "mid-range" did not reveal any significant predictor variables. However, significant predictors of differences were found between "low" and "high" categories on the *Communication and Decision-Making* dimension.

It appears, for instance, that non-hierarchists are more likely (2.574) to report low scores than hierarchists. This means that egalitarians and individualist planners are more likely to select mechanisms that are more intensive (in their requirements for communication) than are hierarchists. This finding suggests that the hypothesized relationship between being a hierarchist and preference for the structure of participatory mechanisms is incorrect, as it indicates that hierarchists are less likely to rely on mechanisms characterized by technical expertise, deliberation and negotiation, aggregation and bargaining, and developing preferences than are individualists and egalitarians. The importance of internal MPO considerations seems to indicate that planning staff are more likely to select "low" participatory practices on the communication dimension than those mechanisms in the "high" category with a single unit increase in the index resulting in a .478 increase in a respondents scores on this measure. No other predictor variables had significant predictive power on placement in the "high," "mid-range," or "low" categories. The classification table indicates that the communication model fares little better than the participant model. With the proportional by chance accuracy rate of 44.84% (1.25 X .3587) indicating that since the model successfully predicted only 43.4%, it is does not meet the standard of predicting 25% better than the proportional chance criteria. Though, much like the

PART model, it does predict better than chance alone (35.87% chance vs. 43.4% model).

Table 31 - COMM Model Parameter Estimates

Total Comm Score Adj (Low Medium High)[a]		B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval	
								Lower	Upper
Low	Intercept	-3.737	2.562	2.129	1	.145			
	InternalMPOConsider	**.487**	**.211**	**5.322**	**1**	**.021**	**1.628**	**1.076**	**2.464**
	ExternalRequire	-.116	.192	.363	1	.547	.891	.612	1.297
	PotentialConsequence	-.266	.164	2.625	1	.105	.766	.555	1.057
	PercentPubTrans	-.002	.021	.012	1	.914	.998	.957	1.040
	PecentWhite	-.010	.011	.788	1	.375	.990	.968	1.012
	[EgalitarianBinary=.00]	.983	1.146	.736	1	.391	2.672	.283	25.229
	[EgalitarianBinary=1.00]	0[b]	.	.	0	.	.	.	.
	[IndividualistBinary=.00]	1.832	1.160	2.494	1	.114	6.246	.643	60.694
	[IndividualistBinary=1.00]	0[b]	.	.	0	.	.	.	.
	[HierarchistBinary=.00]	**2.574**	**1.186**	**4.708**	**1**	**.030**	**13.115**	**1.282**	**134.114**
	[HierarchistBinary=1.00]	0[b]	.	.	0	.	.	.	.
	[Sex_Binary=.00]	.176	.286	.376	1	.540	1.192	.680	2.089
	[Sex_Binary=1.00]	0[b]	.	.	0	.	.	.	.
	[GradDegreeYes=.00]	-.142	.303	.221	1	.638	.867	.479	1.570
	[GradDegreeYes=1.00]	0[b]	.	.	0	.	.	.	.
Mid-Range	Intercept	-3.428	2.613	1.721	1	.190			
	InternalMPOConsider	.301	.192	2.444	1	.118	1.351	.927	1.969
	ExternalRequire	.156	.179	.763	1	.382	1.169	.823	1.660
	PotentialConsequence	-.137	.149	.842	1	.359	.872	.651	1.168
	PercentPubTrans	-.007	.022	.097	1	.755	.993	.952	1.036
	PecentWhite	.004	.011	.121	1	.728	1.004	.982	1.026
	[EgalitarianBinary=.00]	.530	1.178	.202	1	.653	1.699	.169	17.091
	[EgalitarianBinary=1.00]	0[b]	.	.	0	.	.	.	.
	[IndividualistBinary=.00]	1.378	1.190	1.342	1	.247	3.968	.385	40.874
	[IndividualistBinary=1.00]	0[b]	.	.	0	.	.	.	.
	[HierarchistBinary=.00]	1.052	1.190	.782	1	.377	2.863	.278	29.483
	[HierarchistBinary=1.00]	0[b]	.	.	0	.	.	.	.
	[Sex_Binary=.00]	-.048	.267	.032	1	.858	.953	.565	1.609
	[Sex_Binary=1.00]	0[b]	.	.	0	.	.	.	.
	[GradDegreeYes=.00]	-.024	.275	.007	1	.931	.977	.570	1.673
	[GradDegreeYes=1.00]	0[b]	.	.	0	.	.	.	.

a. The reference category is: 3.00.
b. This parameter is set to zero because it is redundant.

Table 32 - Classification Table for Communication and Decision-Making Model

Classification

Observed	Predicted			
	1.00	2.00	3.00	Percent Correct
1.00	42	49	24	36.5%
2.00	34	76	35	52.4%
3.00	22	50	46	39.0%
Overall Percentage	25.9%	46.3%	27.8%	43.4%

The results of this model indicate that we cannot reject the null hypothesis and thus cannot confirm the following hypotheses relating to impact of GGCT worldviews on participatory mechanism selection as it relates to the *Communication and Decision-Making* dimension.

> H2: Planners with an egalitarian GGCT worldview will select more participation mechanisms whose internal structure is characterized by mid- to high scores on Fung's *Communication and Decision Mode* dimension (from *deliberate and negotiate* to *develop preferences*).
>
> H5: Planners with a hierarchist GGCT worldview will select more participation mechanisms whose internal structure is characterized by low scores on Fung's *Communication and Decision Mode* dimension (*technical expertise*).
>
> H8: Planners with an individualist GGCT worldview will select more participation mechanisms whose internal structure is characterized by mid- to high scores on Fung's *Communication and Decision Mode* dimension (from *listen as spectator* to *aggregate and bargain*).

4.5.3 Power Model

The final model explores the power of the predictor variables to correctly predict the membership of respondents in the *Power and Authority* dimension. Examining the model fit information, the model is significant at the $p < .05$ level (.032) and it meets both the Pearson (.273) and Deviance (.056) criteria for a good fit, exceeding the .05 level for each. The

Nagelkerke statistic (.095) suggests that the model explains 9.5% of the overall variance and the -2 Log Likelihood measure of 795.122 indicates an improved power of prediction from the base model of 828.386.

Table 33 - PWR Model Parameter Estimates ("Mid-Range" is Reference Category)

Parameter Estimates

PWR Score Adjusted (Low Medium High)[a]		B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval	
								Lower	Upper
Low	Intercept	-1.399	1.957	.511	1	.474			
	InternalMPOConsider	-.090	.203	.198	1	.656	.914	.614	1.360
	ExternalRequire	-.025	.185	.019	1	.891	.975	.679	1.400
	PotentialConsequence	-.050	.156	.102	1	.750	.952	.701	1.291
	PercentPubTrans	-.003	.021	.016	1	.901	.997	.958	1.038
	PecentWhite	.008	.011	.486	1	.486	1.008	.986	1.029
	[EgalitarianBinary=.00]	.356	.792	.202	1	.653	1.427	.302	6.734
	[EgalitarianBinary=1.00]	0[b]	.	.	0	.	.	.	.
	[IndividualistBinary=.00]	.073	.826	.008	1	.930	1.075	.213	5.433
	[IndividualistBinary=1.00]	0[b]	.	.	0	.	.	.	.
	[HierarchistBinary=.00]	1.197	.841	2.023	1	.155	3.309	.636	17.205
	[HierarchistBinary=1.00]	0[b]	.	.	0	.	.	.	.
	[Sex_Binary=.00]	.097	.267	.131	1	.717	1.102	.652	1.860
	[Sex_Binary=1.00]	0[b]	.	.	0	.	.	.	.
	[GradDegreeYes=.00]	-.050	.289	.030	1	.863	.951	.540	1.676
	[GradDegreeYes=1.00]	0[b]	.	.	0	.	.	.	.
High	Intercept	2.475	2.606	.902	1	.342			
	InternalMPOConsider	**-.523**	**.199**	**6.886**	**1**	**.009**	**.593**	**.401**	**.876**
	ExternalRequire	-.002	.180	.000	1	.991	.998	.701	1.420
	PotentialConsequence	.294	.153	3.696	1	.055	1.342	.994	1.811
	PercentPubTrans	.009	.020	.188	1	.664	1.009	.970	1.050
	PecentWhite	.012	.011	1.238	1	.266	1.012	.991	1.034
	[EgalitarianBinary=.00]	-.843	1.181	.509	1	.475	.431	.043	4.357
	[EgalitarianBinary=1.00]	0[b]	.	.	0	.	.	.	.
	[IndividualistBinary=.00]	-1.759	1.197	2.159	1	.142	.172	.016	1.800
	[IndividualistBinary=1.00]	0[b]	.	.	0	.	.	.	.
	[HierarchistBinary=.00]	-1.022	1.195	.732	1	.392	.360	.035	3.740
	[HierarchistBinary=1.00]	0[b]	.	.	0	.	.	.	.
	[Sex_Binary=.00]	-.044	.270	.027	1	.870	.957	.564	1.623
	[Sex_Binary=1.00]	0[b]	.	.	0	.	.	.	.
	[GradDegreeYes=.00]	.196	.279	.496	1	.481	1.217	.705	2.101
	[GradDegreeYes=1.00]	0[b]	.	.	0	.	.	.	.

a. The reference category is: 2.00.
b. This parameter is set to zero because it is redundant.

The results of this model indicate that a single unit increase in the importance a respondent attaches to internal MPO considerations will results in a decreased likelihood (-.523) that they

will be classified as belonging to the group with "mid-range" scores in the power dimension. Changing the reference category to "high," the model reports that for every one unit increase in internal MPO considerations, the multinomial log odds of an individuals preferring the "low" category to the "high" category will increase by .432. This means that overall, respondents are more likely to prefer the "low" power category (comprised of Direct Authority, Co-Govern, and Advise/Consent) than either the "high" or "mid-range" category as the importance of internal MPO considerations increases. This response by the planning staff might be a reaction that seeks to secure more public buy-in to plans that have are perceived to place a greater emphasis on the needs and considerations of the MPO as an organization. Keeping in mind that the internal MPO considerations scale was comprised of survey responses associated with budget, project schedule, political priorities, project type, safety issues, and agency priorities, it stands to reason that creating participation mechanisms with a greater amount of power for the participants might help to serve as a "check" on the MPO, to make certain that plans that are driven by these types of organizational and technical concerns are not too far afield from what the public expects or would be willing to endorse. This may be an instance of administrators turning to the public to gain either increased legitimacy for their decisions, or an attempt to gain public acceptance, as Moynihan suggests (2003, p. 173).

Additionally, a single unit increase in the importance on the measure of potential consequences will tend to make a planner more likely (-.344) to be categorized as having "high" scores. The higher scores (Communicative Influence and Individual Education) might be more likely because many of the required participation mechanisms, such as Public Meetings, Notices in Newspapers, posting documents on publicly available Websites and Visioning are high on the power scale (coded 4, 5, 4, and 4 respectively). This means that when the potential

consequences, as assessed by planners, are perceived as more important, they may tend to rely on those mechanisms that are required (or similar to the required participation mechanisms).

Table 34 - PWR Model Parameter Estimates ("High" is Reference Category)

Parameter Estimates

PWR Score Adjusted Low Medium High[a]		B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval	
								Lower	Upper
Low	Intercept	-3.874	2.576	2.261	1	.133			
	InternalMPOConsider	**.432**	**.202**	**4.584**	**1**	**.032**	**1.541**	**1.037**	**2.289**
	ExternalRequire	-.023	.186	.016	1	.900	.977	.679	1.406
	PotentialConsequence	**-.344**	**.158**	**4.713**	**1**	**.030**	**.709**	**.520**	**.967**
	PercentPubTrans	-.011	.021	.281	1	.596	.989	.948	1.031
	PecentWhite	-.004	.011	.150	1	.699	.996	.973	1.018
	[EgalitarianBinary=.00]	1.198	1.148	1.091	1	.296	3.315	.350	31.423
	[EgalitarianBinary=1.00]	0[b]	.	.	0	.	.	.	.
	[IndividualistBinary=.00]	1.832	1.160	2.495	1	.114	6.248	.643	60.681
	[IndividualistBinary=1.00]	0[b]	.	.	0	.	.	.	.
	[HierarchistBinary=.00]	2.219	1.181	3.532	1	.060	9.197	.909	93.010
	[HierarchistBinary=1.00]	0[b]	.	.	0	.	.	.	.
	[Sex_Binary=.00]	.141	.277	.258	1	.611	1.151	.669	1.981
	[Sex_Binary=1.00]	0[b]	.	.	0	.	.	.	.
	[GradDegreeYes=.00]	-.246	.290	.723	1	.395	.782	.443	1.379
	[GradDegreeYes=1.00]	0[b]	.	.	0	.	.	.	.
Mid-Range	Intercept	-2.475	2.606	.902	1	.342			
	InternalMPOConsider	.523	.199	6.886	1	.009	1.687	1.141	2.492
	ExternalRequire	.002	.180	.000	1	.991	1.002	.704	1.426
	PotentialConsequence	-.294	.153	3.696	1	.055	.745	.552	1.006
	PercentPubTrans	-.009	.020	.188	1	.664	.991	.953	1.031
	PecentWhite	-.012	.011	1.238	1	.266	.988	.967	1.009
	[EgalitarianBinary=.00]	.843	1.181	.509	1	.475	2.323	.230	23.501
	[EgalitarianBinary=1.00]	0[b]	.	.	0	.	.	.	.
	[IndividualistBinary=.00]	1.759	1.197	2.159	1	.142	5.809	.556	60.730
	[IndividualistBinary=1.00]	0[b]	.	.	0	.	.	.	.
	[HierarchistBinary=.00]	1.022	1.195	.732	1	.392	2.780	.267	28.900
	[HierarchistBinary=1.00]	0[b]	.	.	0	.	.	.	.
	[Sex_Binary=.00]	.044	.270	.027	1	.870	1.045	.616	1.773
	[Sex_Binary=1.00]	0[b]	.	.	0	.	.	.	.
	[GradDegreeYes=.00]	-.196	.279	.496	1	.481	.822	.476	1.419
	[GradDegreeYes=1.00]	0[b]	.	.	0	.	.	.	.

a. The reference category is: 3.00.
b. This parameter is set to zero because it is redundant.

The classification table indicates that the model is only able to successfully predict 42.3% of the cases, compared to the proportional by chance accuracy rate of 43.51% at classifying the respondents into either "low," "mid-range," or "high" power categories. Much as we saw with

the PART and COMM models, the PWR model does not meet the minimum criteria for being a useful model, as it doesn't predict 25% more accurately than chance, though it does predict more accurately than chance alone.

Table 35 - Classification Table for Power Model

Classification

Observed	Predicted			
	1.00	2.00	3.00	Percent Correct
1.00	33	45	41	27.7%
2.00	32	67	34	50.4%
3.00	25	41	60	47.6%
Overall Percentage	23.8%	40.5%	35.7%	42.3%

The results of the power model indicates that the GGCT worldviews demonstrate no statistically significant power to predict membership in any category and thus, we cannot reject the null hypothesis and cannot confirm the following hypotheses.

> H3: Planners with an egalitarian GGCT worldview will select more participation mechanisms whose internal structure is characterized by high scores on Fung's *Authority and Power* dimension (*advise/consult* to *direct authority*).
>
> H6: Planners with a hierarchist GGCT worldview will select more participation mechanisms whose internal structure is characterized by high scores on Fung's *Authority and Power* dimension (*direct authority*).
>
> H9: Planners with an individualist GGCT worldview will select more participation mechanisms whose internal structure is characterized by low scores on Fung's *Authority and Power* dimension (either *communicative influence* or *individual education*).

4.6 Conclusion

This chapter has outlined the results of several tests of association between the primary independent variables and several different outcomes. First, the correlation between the GGCT worldviews and the choice of certain mechanisms was established using t-tests. Second, Chi-square statistics and bivariate correlations were used to indicate that there was also an association

between the worldviews and the total adjusted scores for the three structural dimensions identified by Fung. These tests indicated that there was not a significant relationship between any worldviews and the participant dimension; however, significant correlations were discovered between egalitarian, individualist, and hierarchist classifications and the communication and power scores. These findings lent support to several of the hypotheses proffered in this study and indicated that a more advanced statistical approach to exploring these relationships was called for. Despite these early indications, however, the multinomial logistic regression model failed to demonstrate that the GGCT worldviews had any power predicting differences on any of the three structural dimensions associated with public participation processes. In the next chapter, the implications of these findings will be explored, limitations to the conclusions discussed, and suggestions for future research outlined.

Chapter 5: Discussion, Implications, and Conclusion

5.1 Introduction

The previous chapter presented basic statistical analyses of the data generated for this study. This chapter will engage in a more expansive discussion of the findings and their implications. This research sought to discover whether Grid-Group Cultural Theory could be used to better understand the factors that affect the selection of particular public participation mechanisms in the transportation plans of metropolitan planning organizations. The approach mapped preferences for different public participation mechanisms onto the three dimensions of Archon Fung's Democracy Cube. This approach allows for comparison between different individuals and different mechanisms, which provides a means to test the hypotheses generated by GGCT. The structural nature of Fung's approach to a typology of public participation mechanisms represents an advance because it attempts to locate disparate mechanisms on a continuum that lends itself to more nuanced differences and more complex combinations than other typologies geared toward categorizing participation mechanisms. For example, Moynihan's typology rests on a 3 X 2 table with representativeness being either broad or narrow, and the level of participation being categorized as either "pseudo," "partial," or "full" (see Moynihan 2003, p. 170). This means that each mechanism can be have either broad or narrow representation and be categorized as belonging to one of the three levels. This in turn means that any mechanism can be successfully categorized as belonging to one of 12 categories. Fung's approach allows for (8 (Participant Dimension) X 6 (Communication and Decision-Making Dimension) X 5 (Power and Authority Dimension) or 240 possible combinations. While it is improbable that there are 240 meaningful combinations, it is likely that there are more than 12 different types of mechanisms, especially since 44 were included on the survey alone. This chapter explores further what can be

learned from the results.by connecting the theoretical framework described in Chapter 3 with the statistical results reported in Chapter 4. Beyond examining the support provided for each of the nine hypotheses and general discussions of the control variables, this chapter considers the implications of the findings on the use of GGCT as an explanatory approach to understanding planning staff preferences for participatory mechanisms, especially with respect to alternative explanatory frameworks.

5.2 Discussion of Findings

Table 36 offers a summary of the hypotheses and whether or not they were supported by the data. Although the results reveal virtually no predictive power for the GGCT framework, a closer look at these results in terms of the *Democracy Cube* dimensions is warranted.

Table 36 - Summary Table of Support for Hypotheses

Hypotheses	Results	
Hypothesis 1	Planners with an egalitarian GGCT worldview will select more participation mechanisms whose internal structure is characterized by mid-range scores on Fung's *Participants* dimension.	Not supported.
Hypothesis 2	Planners with an egalitarian GGCT worldview will select more participation mechanisms whose internal structure is characterized by mid- to high scores on Fung's *Communication and Decision Mode* dimension.	Not supported.
Hypothesis 3	Planners with an egalitarian GGCT worldview will select more participation mechanisms whose internal structure is characterized by high scores on Fung's *Authority and Power* dimension.	Not supported.
Hypothesis 4	Planners with a hierarchist GGCT worldview will select more participation mechanisms whose internal structure is characterized by low scores on Fung's *Participants* dimension.	Not supported (significant, but in direction opposite of what was hypothesized).
Hypothesis 5	Planners with a hierarchist GGCT worldview will select more participation mechanisms whose internal structure is characterized by low scores on Fung's *Communication and Decision Mode* dimension.	Not supported.
Hypothesis 6	Planners with a hierarchist GGCT worldview will select more participation mechanisms whose internal structure is characterized by high scores on Fung's *Authority and Power* dimension.	Not supported.
Hypothesis 7	Planners with an individualist GGCT worldview will select more participation mechanisms whose internal structure is characterized by high-range scores on Fung's *Participants* dimension.	Not supported.
Hypothesis 8	Planners with an individualist GGCT worldview will select more participation mechanisms whose internal structure is characterized by mid- to high scores on Fung's *Communication and Decision Mode* dimension.	Not supported.
Hypothesis 9	Planners with an individualist GGCT worldview will select more participation mechanisms whose internal structure is characterized by low scores on Fung's *Authority and Power* dimension.	Not supported.
Hypothesis 10	Planners that adhere to a fatalist GGCT worldview will select minimal participation mechanisms, in light of their deference to authority and feelings of inability to engage in constructive action, these will likely be only those that are required by the relevant legislation and regulations (i.e., public hearings, visioning exercises, and presenting information on agency websites).	Not supported.

5.2.1 The Participant Dimension

For the *Participant Dimension* model, none of the GGCT worldview variables appear to have any statistically significant association with the choice of participatory mechanisms. The failure of the application of GGCT-informed predictions to find support in the data could stem from several sources. First, the types of mechanisms available for survey respondents to choose from were biased toward higher ends of the participatory spectrum (e.g., they were more mechanisms that were targeted to a wide segment of the population than there were those that are intended to target narrower and more homogenous groups of participants). Table 33 below relates the number of mechanisms by the participant score of the mechanism. The higher proportion of mechanisms that score higher on the Fung Participant dimension made it almost inevitable that there would be commonality in the mechanisms chosen as preferred by survey respondents irrespective of GGCT worldview. This likelihood is reinforced by the fact that since individual respondents were instructed to select up to ten mechanisms, the differences between preferences was obscured by selecting the maximum number of mechanisms allowed. In other words, the domain of choice was not very limited. The interview data lend some support to this possibility, as several of the interviewees indicated that with no imposed limitation on the number of mechanisms to be selected, they would select all available. The survey data also support this explanation, as 272 (68 percent) of the respondents selected all 10 mechanisms. The intent of the design of the survey, to gather more information over less, thus worked against precision in the data collected. One possible solution to this problem for future research is to weight the selection based on the ordering of each mechanism, which would assign a weighted value to those mechanisms ranked higher than others. One limitation to this approach would be the associated data loss, which would result, as 17 respondents in the final dataset failed to provide information

regarding their rank-ordered preferences.

Table 37 - Number of Mechanisms by Participant Score

Participant Score (Democracy Cube)	Participant Category	Number of Mechanisms	Percentage of Mechanisms
8	Everyone	6	13.64%
7	Open, Self-Selected	15	34.09%
6	Open, with Targeted Recruitment	16	36.36%
5	Randomly Selected	1	2.22%
4	Lay Stakeholders	5	11.36%
3	Professional Stakeholders	1	2.27%
2	Professional Representatives	1	2.27%
1	Professional Administrators	0	0.00%
		N=44	100.00%

Second, apart from the greater frequency of mechanisms associated with high participant scores when mapped onto Fung's Democracy Cube, there may have been problems using DOT guidance relating to the structure of participatory mechanisms. While the interviews indicated that planners were familiar with the types of mechanisms included on the survey, it is possible that the actual implementation of these mechanisms deviated in some way from the DOT description of the manner in which participants were selected. For instance, if a respondent indicated that they preferred to use a Booth at a Public Event as a mechanism for public outreach (participant score of 7, Open, Self-Selected) but also used the booth to conduct interviews (Participant score of 6, Open, with Targeted Recruitment) this might interfere with the reliability of the findings, since the nature of the Booth at a Public Event would include an aspect for the respondent which was not envisioned by DOT guidance. It is possible that the respondent might correct for this by selecting both Interviews and a Booth at a Public Event as their ideal mechanisms but if the planner defines the mechanism differently from the DOT, then the ability to test the theorized relationships between GGCT worldview may be compromised to some extent. The variable content and execution of public participation mechanism (in addition to a

confused nomenclature) is a recognized problem in the study of public participation (Rowe and Frewer 2005).

Third, another possibility is that the GGCT worldviews are better understood as a background factor that interact with the other variables to produce an effect on which mechanisms are chosen. The organizational context has been shown to have a greater impact on the scores in the model than do the GGCT worldviews, which seems to confirm the approach taken by the planning literature on public participation as described by Bryson et al. 2013. The impact of the "specific purposes and contexts" (2013, p. 24) in which the design of public participation processes takes place certainly seems to have an impact on the likelihood that planners are placed in the "high," "mid-range," or "low" categories defined in this project. Reflecting on the finding that as scores on the *InternalMPOConsiderations* index (composed of responses associated with Budget, Project Schedule, Political Priorities, Project Type, Safety Issues and Agency Priorities) increased by a single unit, the likelihood of a planner selecting a collection of mechanisms placing them in the "high" category decreases, and they are more likely to choose a mix of mechanisms placing them into the "mid-range" category in the participant dimension. This would suggest that as these internal factors become more important, the planning staff is more likely to move toward more structured approach that intentionally builds a group using mechanisms that are open to the public, but also contain an element of targeted recruitment. This reaction could be an effort to enlist public support for planning decisions that are recognized as being driven by forces that are internal to the MPO (Fiorino 1990, p. 239; Weidemann and Femers 1993). This may be taken as an indication that Petts was correct in identifying that those participatory mechanisms most often used by public agencies can be "viewed as a means of legitimizing decisions" (1995, p. 520). Thus, by building

relationships with know actors (through specifically targeted groups and/or individuals) the planning staff can be sure to check with established entities whose ascent to the plan might be important if things were to go wrong in the future. Looking at the results of the model in this way, suggests that as internal factors become more important, planning staff work to cover the bases as a means of demonstrating due diligence.

A more charitable interpretation might be that as the importance of internal factors increases, planning staff seek to compensate by making certain that the input of groups and individuals outside of the organization are taken into account and that the more impersonal newspaper advertisements, radio and television ads, and flyers are not seen as a concerted enough effort to ensure that agency plans comport with the public's views and preferences. However, owing to the cross-sectional design of this study, neither of these two interpretations can be stated with great certainty because no indication of when the participants' involvement took place in the planning process was included in the research design.

The participant model also indicates that as the importance of the index of *PotentialConsequences* (composed of the importance of Limiting Potential Litigation and the perceived Level of Controversy of the plan) increases by one unit, planning staff are more likely to select a mix of mechanisms in the "mid-range" category as opposed to the "high" level. This would also suggest that planning staff take into account the context and specific features of a plan, and when they identify instances where potential public backlash against transportation planning decisions might be expected, they move to increase the cohesiveness of groups involved in the planning process, by making certain to specifically recruit particular groups into the participation process. Whether this move toward more tightly defined groups of participants is undertaken for purposes of "top-down education" or "mutually-shared knowledge (Innes and

Booher 2004, p. 430; see also Yankelovich 1991, p. 323 for a discussion of "pseudo" and "genuine" participation) cannot be ascertained by the data relating to the participant model alone. However, what can be noted is that planning staff does seem to link increased controversy with an approach selecting participants that is less geared toward leaving the participation to chance and more focused on ensuring that specific people or representatives of the public are included in the participants.

The final control variable having a statistically significant effect on the likelihood of planning staff selecting a certain combination of mechanisms is the percentage of the population using public transportation as their primary transportation mode. As this factor increased by a single unit, the likelihood of scores in the "high" category increased. This result might be understood as suggesting that a planner's response to the larger population is to rely on mechanisms that cast a wider net that can reach more participants when it comes to the participatory mechanisms they prefer because a larger proportion of their constituency base is likely to care about transportation planning.

5.2.2 The Communication and Decision-Making Dimension

The results of the model investigating the communication and decision-making dimension suffer from the same concentration of values toward the higher end of the dimension as the participant dimension. The heavy bias toward the higher score (e.g. less intensive) mechanisms would seem to create a situation where the tendency of the respondents to select the maximum allowed number of mechanisms would dilute the score. Again, one possible approach in future studies would be to establish a system by which the rank-ordered mechanisms could be weighed to account for this bias.

Table 38 – Number of Mechanisms by Communication and Decision-Making Dimension Score

Communication and Decision-Making Score (Democracy Cube)	Communication and Decision-Making Category	Number of Mechanisms	Percentage of Mechanisms
6	Listen as Spectator	16	36.36%
5	Express Preferences	20	45.45%
4	Develop Preferences	3	6.82%
3	Aggregate and Bargain	0	0.00%
2	Deliberate and Negotiate	4	9.09%
1	Technical Expertise	0	0.00%
		N=44	100.00%

Despite the bias that may be associated with the mechanisms available for selection, the model did reveal certain differences between planners with regard to their categorization into the "low," "mid-range," and "high" parts of the dimension in relation to two variables. First, the likelihood of planners displaying a "low" score increased in likelihood over a "high" score as the importance of internal MPO considerations index went up. This indicates that planners were more likely to report scores that allowed participants to listen as spectators, express preferences, develop preferences, and aggregate and bargain when the internal MPO considerations become more important. This, coupled with the insights from the participant model, suggests that identifying specific groups and informing them, and/or allowing them to provide their perspective on the plan was more likely to be the chosen path for participation when the internal MPO considerations loomed greater in effect on decisions.

The other interesting finding is that for this model, non-hierarchists were found to have a greater likelihood of having scores that placed them in the "low" category of communication and decision-making than the "high" category. This finding runs counter to the hypothesized direction, which drew upon the insights of GGCT to suggest that hierarchists would be more likely to keep decision-making within a more elite group and shy away from involving the

public. This relationship might be understood to be the result of the mixing of two different factors (the communication versus the decision-making) on this dimension. Stated plainly, hierarchists were hypothesized to prefer the "technical expertise" (lowest score on this dimension) because if its description as an approach to communication and decision-making whereby, "public policies and decisions are determined not through aggregation or deliberation but rather through the technical expertise of officials whose training and professional specialization suits them to solving particular problems" (Fung 2006, p. 68). This seems to describe hierarchist preferences quite well. However, the communication portion of this dimension suggests that at higher levels, individuals are expected to merely express preferences and listen as a spectator and not engage in aggregating and bargaining or deliberation and negotiation. Hood notes that "hierarchists believe orderly rules of behavior and authority structures are needed to avoid chaos, and have little faith in immanent self-organizing or self-steering processes" (Hood 1998, p. 73), which may suggest that hierarchists rely on the institutionalized position of the professional planners to sift through the comments of individuals instead of using staff to create additional structures to facilitate public input. This would, of course, result in the final decision remaining in the hands of the planning staff, however. It would focus on public participation as merely collecting comments and distributing information, not as organizing more cohesive engagement activities to create a coherent public.

5.2.3 The Power and Authority Dimension

The results of the power and authority model indicate that only the internal MPO considerations index variable has any statistically significant impact on the likelihood of scoring in the "low," "mid-range," or "high" category. For every single unit increase in this index, respondents are less likely to place in the "high" category than the "mid-range." This suggests that as the importance

of internal considerations increase, so does the likelihood that planners move toward a mix of mechanisms that confer less power and authority to the participants in the process.

Table 39 - Number of Mechanisms by Power and Authority Score

Power and Authority Score (Democracy Cube)	Power and Authority Category	Number of Mechanisms	Percentage of Mechanisms
5	Individual Education	17	38.64%
4	Communicative Influence	21	47.74%
3	Advise/Consent	5	11.36%
2	Co-Govern	1	2.27%
1	Direct Authority	0	0.00%
		N=44	100.00%

5.3 Implications

The major implications of this research are two-fold. The first relates to the utility of GGCT as a theoretical framework for better predicting the selection of mechanisms in public participation processes for LRTPs in MPOs. The results of the *t*-tests and bivariate correlations suggest that there are indeed associations between GGCT worldviews and measureable differences between worldviews. The egalitarian worldview is negatively correlated with increasing scores on the Communication and Decision-Making dimension (-.225, $p < .01$) and the Power and Authority dimension (-.168, $p < .01$). This suggests that egalitarians prefer mechanisms that require more involvement and confer more authority on the participants. This confirms what hypothesized as it indicates that the egalitarian planner is fond of those mechanisms that tend to intentionally create groups that are used to develop group decisions.

The hierarchist worldview, by contrast, is positively correlated, .187 ($p < .01$) with the scores on the Communication and Decision-Making dimension and .119 ($p < .05$) with scores on the Power and Authority dimension. This suggests, contrary to the theorized direction, that being

a hierarchist is associated with preferring mechanisms that are more open to self-selection by the members of the public and focus more on individual benefits from the participation and not on creating a group understanding of the common good.

The individualist worldview displays similar (though weaker) correlations as the hierarchist worldview with .115 ($p < .05$) for the Communication and Decision-Making dimension and .111 ($p < .05$) with scores on the Power and Authority dimension. This means that while individualist planners display a similar set of preference to hierarchists, they may be more open to mechanisms that allow people to meet and talk, as opposed to simply providing feedback to the administrators. This talk might be more oriented toward identifying allies who share existing (individual) interests, instead of the egalitarian preference of creating a shared understanding of the common good. However, the weaker correlation between the individualist planners and the Communication and Decision-Making dimension compared to hierarchists, might reflect some of the individualist suspicion of government and the role of individuals in coming together to keep an eye on officials. Coupled with the differences indicated by the independent samples *t-tests* in the mean values for 12 different mechanisms between egalitarians and non-egalitarians, the utility of GGCT for improving our understanding of planners' preferences regarding participatory mechanisms should not be discounted entirely.

To take just one example, planners who hold an egalitarian worldview selected Sociocultural Effects Analysis 40% more frequently as a preferred mechanism than did non-egalitarians. They also selected Public Meetings as a preferred mechanism 15% less frequently than non-egalitarians. These differences seem to suggest that the worldview, in isolation, can help to understand differences between planners' preferences for participation mechanisms. The egalitarian preference for Sociocultural Effects Analysis is a case in point, as it conforms to the

hypothesized preferred score for egalitarians on each of the three dimensions. Structurally, it is composed of Lay Stakeholders (score 4) on the participants dimension, Deliberate and Negotiate (score 2) on the Communication and Decision-Making dimension, and Advise and Consult (score 3) on the Power and Authority dimension. The hypothesized egalitarian preferences on the participant and communication and decision-making dimension were also reflected for charettes, special transportation to meetings, and visioning, which the *t-tests* indicated were statistically more likely to be selected by egalitarians than non-egalitarians. These mechanisms are key for egalitarians, since both charettes and visioning are both mapped as a 2 (Deliberate and Negotiate) on Fung's Communication and Decision-Making dimension. As Fung notes, this approach to participation makes an "attempt to develop a collective choice" (2006, p. 68) and is a "process of interaction, exchange, and – it is hoped – edification [which] precedes group choice. Second, participants in deliberation aim toward agreement with one another…" (p. 69). Providing transportation to meetings for the elderly and disabled is also important for egalitarians, because access to the decision making process must be equal and people should not be excluded. Tying this approach to public participation back to GGCT Wildavsky points out, that egalitarians favor a group process that is "grow[n] from the bottom up" and where "the participants possess equivalent resources" (1992, p. 18).

Despite the favorable findings when GGCT worldviews were examined absent control variables, the incorporation of those factors that are related to internal MPO considerations (see TCRP 2011), seem to blunt the impact that the GGCT worldview has on the overall score for the three dimensions. This suggests that when planning staff is asked to reflect on organizational impacts, these tend to control the design of the process. This finding supports Moynihan's (2003) admonishment that "Successful prescriptive theories in the public sector need to make plausible

arguments about why existing administrative outcomes occur and how structures and incentives can be adjusted to foster more desirable outcomes. In public participation, this demands an instrumental perspective" (Moynihan 2003, p. 182). Therefore, this research can be understood to lend support to the idea that the goals and objectives that flow from the context are a vital input into the way planners go about selecting participatory mechanism, one that seems to trump the impact that the preferences that flow from their worldview (Thompson, Ellis, and Wildavsky 1990, p. 56) have on their selection of participatory mechanisms. However, it is possible that in the future, by adopting a model that goes beyond the Main Effects approach presented here, it could be feasible to understand how the GGCT worldviews may interact with the contextual effects variables to better predict the selection of particular mechanisms. It we can better understand the relationship between the context, the planner's GGCT worldview, and the selection of specific measures we might be able to identify and correct for any over or under-employment of particular types of mechanisms.

5.4 Contributions

While most of the hypotheses posited by this dissertation were not supported, the research has made several worthwhile contributions. First, this dissertation has operationalized and employed Fung's Democracy Cube as a structural framework for analyzing the public participation design process. While Ney and Verweij (2014) employed Fung's work as a typology for categorizing institutional design choices for public participation, they did not go so far as to map mechanisms in a manner that made hypothesis generation and statistical testing possible. This dissertation undertook this task, and, although research design choices may have resulted in an analytical structure that failed to accurately reflect actual design practices, the results of this dissertation should not be interpreted as a refutation of the utility of this approach. In fact, future research

should engage planners in mapping mechanisms onto the Democracy Cube to establish a more definitive mapping of values, and connect design factors and choices to the relative publicness of various participation mechanisms that Fung's framework captures..

A second contribution is the application of Grid-Group Cultural Theory to the design of participatory processes from the view of the administrators employed in public planning agencies. Previous work using GGCT to examine public participation has generally focused on either the preferences for particular policies that participants in public engagement activities have (Hoogstra-Klein et al. 2012; Porkorny and Schanz 2003) or the impact of GGCT worldviews on the preferences that the members of the public have for particular participatory mechanisms (Trouseet et al. 2015). Hood (1995; 1998) has explored the impact of GGCT on the types of administrative controls used to manage public agencies, but he has not engaged in either an exploration of public participation, or in an empirical application of his categorization of bureaucratic controls. This dissertation, on the other hand, investigated the GGCT worldviews of MPO planning staff and linked these directly to the mechanisms for engaging the public that planners preferred. By including variables that represented additional factors that have been known to influence public participation design, the study's findings that planners' assessments of the importance of contextual factors drive differences among characteristics of the overall participatory process seen across MPOs lends support to Pokorny and Schanz's suggestion that GGCT studies should consider professional experience and education in addition to measures of GGCT worldviews. More specifically, GGCT researchers should be sure to take into account the particular factors that are important in particular organizational settings in addition to solely individual administrator characteristics. Administrators are in part creatures of their organizations; after all, so investigating the interaction of organizational and individual

characteristics is vital for gaining a full picture of the public participation design process in public organizations.

The quantitative mapping of the structural components of participatory mechanisms onto Fung's Democracy Cube and its association with GGCT as a theoretical explanation has provided further foundation for investigating this interactive process. By taking a tentative step toward linking individual policy preferences, a popular subject for GGCT studies (see Silva and Jenkins-Smith 2007; Jones 2011; Ripberger 2012), and preferences for various structural designs of organizational programs, highlights the value of including variables capturing organizational prerogatives in future studies utilizing GGCT. These effects seem to present a more nuanced picture of the interaction between the foundational nature of GGCT worldviews and the organizational context in which individuals find themselves. In short, it seems that the organization matters, not only in the sense that particular forms of public participation adopted might influence the outcome produced by the decision-making processes in the organization (Gabrini 2010), but also in that the organization itself may exert influence on the employees to prefer particular participatory mechanisms in response to the context in which the organization operates. In this study, the impact of potential consequences and especially internal MPO considerations seem to have this effect on the type of participatory process preferred by planning staff.

5.5 Limitations

As with all studies, it is just as important to understand what the results cannot tell us, as what they can. In this section, I will consider the main limitations of this dissertation, with an eye toward developing a realistic appraisal of what can be drawn from the research and what future work can do to address the limitations of the current work.

First, the survey is cross-sectional in nature, and takes only a snapshot of conditions related to public participation mechanisms. Second, this survey concentrates on only a single MPO planning product, the Long-Range Transportation Plan. In an effort keep the time required to complete the survey within reasonable bounds in hopes of increasing the response rate, other planning processes were not explored. Third, the survey, while incorporating a small amount of data extracted from document analysis, is heavily dependent on self-reported data from a single questionnaire. This opens the research to criticism that the data may be compromised by common method variance (CMV).

The model was augmented with data on the overall use of public transportation as well as the homogeneity of the population in the metropolitan areas where MPOs operate, and the results of Harman's single factor test indicate CMV is not a major problem. Nevertheless, other measurement problems may be present. First, responses to several of the questions may have been affected by the social desirability that may be attached to several of the items (Podsakoff, MacKenzie, Lee, and Podsakoff 2003). For example, one item that is included in the survey asks about the perceived importance of the need for community input in their design of public participation practices. As we might imagine, it is probably not socially desirable for planners to report that they don't feel the need for community input as important when conceiving an approach to public participation. Therefore, these scores should be interpreted with caution, although, since the participants were advised in the recruitment email that public participation was the focus of the survey, it is possible that high scores on this item can be explained by respondents' interest in the topic.

A second limitation that applies to this research has to do with the generalizability of the results. Significant care was taken to insure that the appropriate respondents were identified by

consulting staff listings and job descriptions posted on MPO websites, yet it is also important to note that while 1,901 invitations were issued, only 398 useable responses were included in the final analysis. It is not possible, therefore, to state unequivocally that the respondents are a representative sample of MPO planning staff. Additionally, the overrepresentation of those classified as egalitarians (n = 227) over individualists (n = 88), hierarchists (n = 75) and fatalists (n = 8), raises an interesting question. Were egalitarians more likely to respond to this survey, or do egalitarians make up a larger percentage of MPO planning staff members? It is impossible to ascertain which of these alternatives, or some other explanation, are true based on the survey data, but it does bring up a troubling possibility that a systematic selection bias may run through GGCT research, if egalitarians are more likely to respond to surveys.

Another limitation is that this research failed to include any questions related to how much training staff have received related specifically to the design and implementation of public participation processes. In fact, one of the respondents to the survey took the time to email me concerns regarding this omission. The respondent insisted that "you miss the opportunity to ask about the responders total experience, how many years at any MPO, and what other trainings have been taken, certification earned, etc. I think that is an oversight" (Personnel Communication with Survey Respondent, 2/10/15). While the survey did include a question soliciting information regarding the participants' length of service with their current MPOs, I agree with the sentiments expressed by the respondent. The high level of educational attainment of the population of planning staff in MPOs suggests that professional training dedicated to participatory design practices may have an impact on the choices they make, independent of either GGCT worldviews, potential consequences, or internal MPO considerations. This suggests that future studies should be sure to collect information relating to training undertaken by MPO

planning staff members, and even relate preference for, and extent of training gained, with GGCT worldviews.

A more fundamental limitation of this study is that it focuses solely on the participatory mechanisms associated with Long Range Transportation Plans produced by MPOs. While research suggests that LRTPs do employ larger number of engagement mechanisms than another MPO planning product, such as the Transportation Improvement Plan (TIP) (Hopes, et al. 2006, p. 104), there exists the possibility that the planning processes for multiple MPO products might be approached as complementary to one another and not as mutually exclusive. That information derived from a planning process used in MPO corridor studies, TIP planning, or other transportation planning exercises should temper our interpretation of the findings by leaving open the possibility that while the participatory mechanisms used in LRTP development may be formally distinct (i.e., they are identified in the text of the plan itself), staff may informally draw on information from other studies to inform their decision-making processes in LRTP development. This possibility was made apparent to me by the responses from an interviewee in the pilot study, who stated "So we learn through the other plans as well…And then, those responses end up pulling double duty to help with the long range plan. Right, so it's sorta like this whole feedback is killing two birds with one stone" (Interviewee 3). Therefore, the distinction between the LRTP and other planning products, while finding support from the literature, may not hold true across all MPOs in all conditions.

This study provides conflicting answers to the question of whether GGCT worldviews provide a profitable way to theorize about planner's preferences for particular participatory mechanisms. It seems clear that internal MPO considerations have a more demonstrable effect on the design of participatory processes; however, differences between hierarchists and the holders

of egalitarian and individualist worldviews do seem to affect preferences on the Communication and Decision-Making dimension. Future research may choose to explore why this distinction may be important. Douglas and Wildavsky (1982), for example, identify a union between individualists and hierarchists (termed "the center") when it comes to defining which technologies are risky, and contrasts them with egalitarians (termed "the border") whose perceptions of risks are different. Douglas and Wildavsky posit that the rise of egalitarianism helps to explain the increasing salience of environmentalism in the United States and that "the border" presented a challenge to "the center." This dissertation suggests that it is possible, in the years since Douglas and Wildavsky wrote, that the center did not hold, and a new political alignment has emerged (at least in this very limited case). It is possible that the rise of neoliberalism, revelations of widespread government surveillance, and other macro-level cultural changes have created a situation where individualists and egalitarians may find increasing common ground in opposition to traditional governing structures (i.e., hierarchical forms of public organization). While this research is too limited to make any definitive predictions, it is worth keeping in mind GGCT's theory of surprise and its effect on changing worldviews. Future GGCT scholars should be alert to the possibility of macro-level changes in the society could result in a realignment among of the various GGCT worldviews which might indicate the end of the alliance between individualist and hierarchist worldviews (the aforementioned "center"). A collapse in the traditional "center" might give rise to an alliance between the egalitarian and individualist worldviews that would demonstrate significant antipathy toward traditional bureaucratic organization. Indeed, the long-standing dilemma of the "usual suspects" as the primary participants in public engagement activities (Bickerstaff and Walker 2005) might be an indication of a move in this direction.

5.5 Conclusion

This dissertation has reported the results of a self-administered online survey with the intention of understanding the impact that MPO planners' worldviews have on their preferences for public participatory mechanisms in transportation plan designs. This research also sought to incorporate Fung's Democracy Cube as a structural framework that allows for the development and testing of hypotheses related to public participation selection. While the results of this study are tentative, I believe that moving toward more formal approaches to exploring the question of what factors influence the selection of public participation mechanisms is an important direction for future research. The primary insight offered by Grid-Group Cultural Theory is that preferences for specific values influence, and are influenced by, particular forms of social relationships (Thompson, Ellis, and Wildavsky 1990, p. 57). This understanding can, when augmented by a healthy appreciation of disparate organizational contexts, help to explain the choices public officials make with regard to the structure of participatory processes. When a planner conceives the role of the public to be passive and accepting of the decisions made by experts, we can expect that a hierarchist worldview may animate the individual. Insofar as the mechanisms selected allow the public to primarily provide a sounding board for the experts, with strictly proscribed avenues for input, the planner will see their worldview realized in the social relationships they create. Only when this mode of constructing the interaction is interrupted by a series of surprises (or interventions outside the individual) will they be likely to change their approach to public participation. Future work linking the preferences of planners with the preferences of the population that they aim to involve in the process would seem to be an important extension of this dissertation. By taking seriously the notion that different worldviews are operating in society, we can appreciate that administrators acting in good faith may design

and implement institutional practices that are seen by those holding other worldviews as ineffectual (at best) or inauthentic and manipulative (at worst). This mismatch in expectations may be responsible for the creation of a great deal of acrimony between participants that might be avoided by a greater appreciation of the prism of culture through which people view the world.

References

Abram, S. A. (2000). "Planning the Public: Some Comments on Empirical Problems for Planning Theory." Journal of Planning Education and Research **19**: 351-357.

Agresti, A. and B. Finlay (2009). Statistical Methods for the Social Sciences, Pearson.

Altman, Y. and Y. Baruch (1998). "Cultural Theory and Organizations: Analytical Method and Cases." Organization Studies **19**(5): 769-785.

Arnstein, S. R. (1969). "A Ladder of Citizen Participation." Journal of American Institute of Planners **3**(4): 216-224.

Aronoff, M. and V. Gunter (1994). "A pound of cure: Facilitating participatory processes in technological hazard disputes." Society & Natural Resources **7**(3): 235-252.

Barber, B. R. (2003). Strong Democracy: Participatory Politics for a New Age. Berkeley and Los Angeles, CA, University of California Press.

Bayaga, A. (2010). "Multinomial Logistic Regression: Usage and Application in Risk Analysis." Journal of Applied Quantitative Methods **5**(2): 288-297.

Beetham, D. (1993). "In Defence of Legitimacy." Political Studies **XLI**: 488-491.

Beierle, T. C. and D. M. Konisky (2000). "Values, Conflict, and Trust in Participatory Environmental Planning." Journal of Policy Analysis and Management **19**(4): 587-602.

Bherer, L. and S. Breux (2012). "The Diversity of Public Participation Tools: Complementing or Competing With One Another? ." Canadian Journal of Political Science/Revue canadienne de science politique **45**(2): 379-403.

Bickerstaff, K. a. W., Gordon (2005). "Shared Visions, Unholy Alliances: Power, Governance, and Deliberative Processes in Local Transport Planning." Urban Studies **42**(12): 2123-2144.

Blahna, D. J. and S. Yonts-Shepard (1989). "Public Involvement in Resource Planning: Toward Briding the Gap Between Policy and Implementation." Society & Natural Resources **2**: 209-227.

Box, R. C. (1992). "The Administrator as Trustee of the Public Interest: Normative Ideals and Daily Practice." Administration & Society **24**(3): 323-345.

Bryson, J. M., K. S. Quick, C. S. Slotterback and B. C. Crosby (2013). "Designing Public Participation Processes." Public Administration Review **73**(1): 23-34.

Burns, R. and R. Burns (2009). Business Research Methods and Statistics using SPSS, Sage Publications Ltd. .

Cameron, K. S. and R. E. Quinn (2006). Diagnosing and changing organizational culture: based on the competing values framework. San Francisco, Jossey-Bass.

Carnes, S. A., M. Schweitzer, E. Peele, A. K. Wolfe and J. F. Munro (1996). Performance Measures for Evaluating Public Participation Activities in DOE's Office of Environmental Management. D. o. Energy. Oak Ridge, TN.

Carp, J. (2004). "Wit, Style, and Substance - How Planners Shape Public Participation." Journal of Planning Education and Research **23**: 242-254.

Chai, S.-K., D. Dorj, K. Hampton and M. Liu (2011). "The Role of Culture in Public Goods and Other Experiments." PS(October): 740-744.

Chess, C. and K. Purcell (1999). "Public Participation and the Environment: Do We Know What Works?" Environmental Science and Technology **33**(16): 2685-2692.

Comrey, A. (1973). A First Course in Factor Analysis. New York, Academic Press, Inc.

Ulster County (n.d.). "What is a Transportation Management Area (TMA)?" Retrieved 6/16/15, 2015, from http://ulstercountyny.gov/sites/default/files/documents/tma_req.pdf.

Coyle, D. and A. Wildavsky (1987). "Requisites of Radical Reform: Income Maintenance Versus Tax Preferences." Journal of Policy Analysis and Management **7**(1): 1-16.

Cramer, D. and D. Howitt (2004). The Sage Dictionary of Statistics: A Practical Resource for Students in the Social Sciences. Thousand Oaks, CA., Sage.

Dag, S. (2002). "Norwegian Politcs of Abortion: Perspectives, Arguments, and Values." Journal of Comparative Policy Analysis: Research and Practice **4**: 287-304.

Dake, K. (1991). "Orienting Dispositions in the Perceptions of Risk: An Analysis of Contemporary Worldviews and Cultural Biases." Journal of Cross-Cultural Psychology **22**(1): 61-82.

Daley, D. M. (2008). "Public Participation and Environmental Policy: What Factors Shape State Agency's Public Participation Provisions." Review of Policy Research **25**(1): 21-35.

Dickey, J. (1983). Metropolitan Transportation Planning. Washington, D.C., McGraw-Hill.

Dilman, D. A. (1999). Mail and Internet Surveys: The Tailored Design Method, John Wiley & Sons, Inc.

Docter, S. P., J. Street, A. J. Braunack-Mayer and G.-J. Van Der Wilt (2011). "Public Perceptions of Pandemic Influenza Resource Allocation: A Deliberative Forum Using Grid/Group Analysis." Journal of Public Health **32**(3): 350-366.

Douglas, M. and A. Wildavsky (1982). Risk and Culture: An Essay on the Selection of Technological and Environmental Dangers. Berkely, Los Angeles, and London., University of California Press.

Ebdon, C. and A. L. Franklin (2006). "Citizen Participation in Budgeting Theory." Public Administration Review **66**(3): 437-447.

Ellis, R. and A. Wildavsky (1990). "A Cultural Analysis of the Role of Abolitionists in the Coming of the Civil War." Comparative Studies in Society and History **32**(1): 89-116.

FDOT (2011). Sociocultural Effects Evaluation. F. D. o. Transportation.

FHWA (2013). The Transportation Planning Process: Key Issues, A Briefing Book for Transportation Decisionmakers, Officials, and Staff. T. P. C. B. Program, Federal Highway Administration Federal Transit Administration.

Field, A. (2009). Discovering Statistics Using SPSS. Thousand Oaks, CA, Sage Publications, Inc.

Fiorino, D. J. (1990). "Citizen Participation and Environmental Risk: A Survey of Institutional Mechanisms." Science, Technology, & Human Values **15**(2): 226-243.

Forest, P. (2013). ""Citizens as Analysts" Redux: Revisiting Aaron Wildavsky on Public Participation." Journal of Public Deliberation **9**(1).

Fung, A. (2006). "Varieties of Participation in Complex Governance." Public Administration Review **December**(Special Issue): 66-75.

Gabrini, C. J. (2010). "Do Institutions Matter? The Influence of Institutions of Direct Democracy on Local Government Spending." State and Local Government Review **42**(3): 210-225.

Gariepy, M. (1991). "Toward a dual-influence system: assessing the effects of public participation in environmental impact assessment for Hydro-Quebec projects." Environmental Impact Assessment Review **11**: 353-375.

Gerber, E. R. and C. C. Gibson (2009). "Balancing Regionalism and Localism: How Institutions and Incentives Shape American Transportation Policy." American Journal of Political Science **53**(3): 633-648.

Goetz, A. R., P. S. Dempsey and C. Larson (2002). "Metropolitan Planning Organizations: Findings and Recommendations for Improving Transportation Planning." Publius: The Journal Of Federalism **32**(1): 87-105.

Grosshardt, T., K. Bailey and J. Brumm (2003). Structured Public Involvement: Problems and Prospects for Improvement. Transportation Research Board 2003 Annual CD-ROM.

Hair, J. F., W. C. Black, B. J. Babin, R. E. Anderson and R. L. Tatham (2006). Multivariate Data Analysis. Upper Saddle River, New Jersey, Pearson Prentice Hall.

Halvorsen, K. E. (2001). "Assessing Public Participation Techniques for Comfort, Conenience, Satisfaction, and Deliberation." Envronmental Management **28**(2): 179-186.

Heikkila, T. and K. R. Isett (2007). "Citizen Involvement and Performance Management in Special-Purpose Governments." Public Administration Review **67**(2): 238-248.

Held, D. (1996). Model of Democracy. Stanford, CA, Standford University Press.

Hood, C. (1995). "Control Over Bureaucracy: Cultural Theory and Institutional Variety." Journal of Public Policy **15**(3): 207-230.

Hood, C. (1998). The Art of the State: Culture, Rhetoric, and Public Management. Oxford, Clarendon Press.

Hoogstra-Klein, M. A., D. B. Permadi and Y. Yasmi (2012). "The Value of Cultural Theory for Participatory Processes in Natural Resource Management." Forest Policy and Economics **20**: 99-106.

Hopes, C. a. K., Jeff, and Williams, Kristine (2006). "Public Involvement Practices and Perspectives of Florida's Metropolitan Planning Organizations." Transportation Research Record: Journal of the Transportation Research Board(No. 1981): 100-108.

IDRE. (2015). "SPSS Data Analysis Examples - Multinomial Logistic Regression." Retrieved 5-27-15, 2015, from http://www.ats.ucla.edu/stat/spss/dae/mlogit.htm.
Innes, J. E. and J. Gruber (2001). Bay Area Transportation Decision Making In the Wake of ISTEA: Planning Styles in Conflict at the Metropolitan Transportation Commission**:** 555.

Innes, J. E. and J. Gruber (2005). "Planning Styles in Conflict." Journal of American Planning Associaiton **71**(2): 177-188.

Innes, J. E. a. and D. E. Booher (2004). "Reframing Public Participaiton: Strategies for the 21st Century." Planning Theory & Practice **5**(4): 419-436.

Irvin, R. A. and J. Stansbury (2004). "Citizen Participation in Decision Making: Is It Worth the Effort?" Public Administration Review **64**(1): 55-65.

Jenkins-Smith, H., C. L. Silva, K. Gupta and J. Ripberger (2012). Belief System Continuity and Change with the Advocacy Coalition Framework: Applications of Grid/Group Theories. Midwest Political Science Association. Chicago.

Jensen, L. (1998). "Cultural Theory and Democratizing Functional Domains. The Case of Danish Housing." Public Administration **76**(Spring): 117-139.

Jones, M. D. (2010). Heroes and Villains: Cultural Narratives, Mass Opinions, and Climate Change. Ph.D., University of Oklahoma.

Jones, M. D. (2011). "Leading the Way to Compromise? Cultural Theory and Climate Change Opinion." PS **October**: 720-725.

Karpowitz, C. F. and J. Mansbridge (2005). "Disagreement and Consensus: The Need for Dynamic Updating in Public Deliberation." Journal of Public Deliberation **1**(1): 348-364.

Kihl, R. M. (1985). "The Viability of Public Hearings in Transportation Planning." The Journal of Applied Behavioral Science **21**(2): 185-200.

King, C. S. a. F., Kathryn M. and Susel, Bridget O'Neill (1998). "The Question of Participation: Toward Authentic Public Participation in Public Administration." Public Administration Review **58**(4): 317-326.

Kirk, R. S., J. Frittelli, L. Luther, W. J. Mallet and D. R. Peterman (2012). Surface Transportation Funding and Programs Under MAP-21: Moving Ahead for Progress in the 21st Century Act (P.L. 112-141). C. R. Service**:** 33.

Kweit, M. G. and R. W. Kweit (1984). "The Politics of Policy Analysis: The Role of Citizen Participation in Analytic Decisionmaking." Policy Studies Review **3**(2): 234-245.

Laird, F. N. (1993). "Participatory Analysis, Democracy, and Technological Decision Making." Science, Technology, & Human Values **18**(3): 341-361.

Lauber, T. B. and B. A. Knuth (1999). "Measuring Fairness in Citizen Participation: A Case Study of Moose Management." Society & Natural Resources **11**: 19-37.

Lavrakas, P. J. (2008). Encyclopedia of Survey Research Methods, Sage Publications.

Lee, C. (2011). "Five Assumptions Academics Make About Public Deliberation, And Why They Deserve Rethinking." Journal of Public Deliberation **7**(1).

Lewis, P. G. and M. Sprague (1997). Federal Transportation Policy and the Role of Metropolitan Planning Organizations in California. P. P. I. o. California. San Francisco, Public Policy Institute of California**:** 180.

Lukensmeyer, C. J. and S. Brigham (2002). "Taking Democracy to Scale: Creating a Town Hall Meeting for the Twenty-First Century." National Civic Review **91**(4): 351-366.

Lynn, F. M. and G. J. Busenberg (1995). "Citizen Advisory Committees and Environmental Policy: What We Know, What's Left to Discover." Risk Analysis **15**(2): 147-162.

MacNair, R. H. a. C., Russel and Leonard, Pollane (1983). "Citizen Participants in Public Bureaucracies." Administration & Society **14**(4): 507-524.

Mamadouh, V. (1999). "Grid-Group Cultural Theory: An Introduction." GeoJournal **47**(3): 395-409.

Mathews, D. (1994). Politics For People: Finding a Responsible Voice. Urbana, University of Illinois Press.

McGovern, S. J. (2013). "Ambivalence over Participatory Planning within a Progressive Regime: Waterfront Planning in Philadelphia." Journal of Planning Education and Research **33**(3): 310-324.

Meader, N., D. Uzzell and B. Gatersleben (2006). "Cultural Theory and Quality of Life." Revue europeenne de psychologie appliquee **56**: 61-69.

Menard, S. W. (1995). Applied logistic regession analysis, Sage.

Miles, J. (2013). "Understanding Public Involvement Practice in North Carolina Metropolitan Planning Organizations: An Analysis of Goals and Tactics." 2013 Annual Meeting of the Transportation Research Board.

Moore, S. A. (1996). "Defining "Successful" Environmental Dispute Resolution: Case Studies From Public Land Planning in the United States and Australia." Environmental Impact Assessment Review **16**: 151-169.

Moynihan, D. P. (2003). "Normative and Instrumental Perspectives on Public Participation: Citizen Summits in Washington, D.C." American Review of Public Administration **33**(2): 164-188.

Mueller, D. C. (2015). "Public choice, social choice, and political economy." Public Choice **163**(3-4): 379-387.

Nabatchi, T. (2010). "Addressing the Citizenship and Democratic Deficits: The Potential of Deliberative Democracy for Public Administration." American Review of Public Administration **40**(4): 376-399.

Nabatchi, T. and L. B. Amsler (2014). "Direct Public Engagement in Local Government." American Review of Public Administration **44**(4S): 63S-88S.

Neshkova, M. I. and G. D. Hai (2012). "Public Participation and Organizational Performance: Evidence from State Agencies." Journal of Public Administration Research & Theory **22**: 267-288.

Ney, S. and M. Verweij (2014). "Exploring the Contributions of Cultural Theory for Improving Public Deliberation about Complex Policy Problems." Policy Studies Journal **32**(2): 620-643.

Norris, D. F. (2001). "Prospects for Regional Governance Under the New Regionalism: Economic Imperatives Versus Political Impediments." Journal of Urban Affairs **23**(5): 557-571.

Owens, S. (2000). "'Engaging the public': Information and deliberation in environmental policy." Environment and Planning A **32**(7): 1141-1148.

Pateman, C. (1976). Participation and Democratic Theory. Cambridge, MA, Cambridge University Press.

Petts, J. (1996). "Risk Communication: Research Findings and Needs." Land Contam Reclamation **4**(3).

Plumlee, J. P., J. D. Starling and K. W. Kramer (1985). "Citizen Participation in Water Quality Planning: A Case Study of Perceived Failure." Administration & Society **16**(4): 455-473.

Podsakoff, P. M., S. B. MacKenzie, J.-Y. Lee and N. P. Podsakoff (2003). "Common Method Bias in Behavioral Research: A Critical Review of the Literature and Recommended Remedies." Journal of Applied Psychology **88**(5): 879-903.

Poisner, J. (1996). "Civic Republican Perspective on the National Environmental Policy Act's Process for Citizen Participation." Environmental Law **53**: 53-94.

Pokorny, B. and H. Schanz (2003). "Empirical Determination of Political Cultures as a Basis for Effective Coordination of Forest Management Systems." Society & Natural Resources **16**(10): 887-908.

TCRP. (2011). Synthesis 89: Public Participation Strategies for Transit, National Academy of Sciences.

Rasinski, K. A., G. B. Willis, A. K. Baldwin, W. Yeh and L. Lee (1999). "Methods of data collection, perceptions of risks and losses, and motivation to give truthful answers to sensitive survey questions." Applied Cognitive Psychology **13**(5): 465-484.

Reinke, D. a. M., Daniel (1996). "Implementing Integrated Transportation Planning in Metropolitan Planning Organization: Procedural and Analytical Issues." Transportation Research Record: Journal of the Transportation Research Board(1552): 71-78.

Renn, O., T. Webler, H. Rakel, P. Dienel and J. Branden (1993). "Public Participation in Decision Making: A Three-Step Procedure." Policy Sciences **26**(3): 189-214.

American Association of Public Opinion Research. (2010). AAPOR Outcome Rate Calculator. http://www.aapor.org/AAPORKentico/AAPOR_Main/media/MainSiteFiles/ResponseRateCalculatorVer3-1_11_22_10.xls. ResponseRateCalculatorVer3-1_11_22_10.xls.

Ripberger, J. T., H. C. Jenkins-Smith and K. G. Herron (2011). "How Cultural Orientations Create Shifting National Security Coalitions on Nuclear Weapons and Terrorist Threats in the American Public." PS **October**: 715-719.

Ripberger, J. T., G. Song, M. C. Nowlin, M. D. Jones and H. C. Jenkins-Smith (2012). "Reconsidering the Relationship Between Cultural Theory, Political Ideology, and Politcal Knowledge." Social Science Quarterly **93**(3): 713-731.

Robbins, M. D., B. Simonsen and B. Feldman (2008). "Citizens and Resource Allocation: Improving Decision Making with Interactive Web-Based Citizen Participation." Public Administration Review **68**(3): 564-575.

Roberts, N. (1997). "Public Deliberation: An Alternative Approach to Crafting Policy and Setting Direction." Public Administration Review **57**(2): 124-132.

Rosener, J. (1978). "Citizen Participation: Can We Measure Its Effectiveness?" Public Administration Review **38**(5): 457-463.

Rowe, G. and L. Frewer (2000). "Public Participation Methods: A Framework for Evaluation." Science, Technology, & Human Values **25**(1): 3-29.

Rowe, G. and L. Frewer (2004). "Public-Participation Exercises: A Research Agenda." Science, Technology, & Human Values **29**(4): 512-557.

Rowe, G. and L. Frewer (2005). "A Typology of Public Engagement Mechanisms." Science, Technology, & Human Values **30**(2): 251-290.

Roy, A. (2001). "A "Public" Muse: On Planning Convictions and Feminist Contentions." Journal of Planning Education and Research **21**: 109-126.

Sanchez, T. W. (2006). An Inherent Bias? Geographic and Racial-Ethnic Patterns of Metropolitan Planning Organization Boards. Brookings Instituiton. Washington D.C., Brookings Press.

Sandel, M. J. (1996). Democracy's Discontent: America in Search of a Public Philosophy. Cambridge, The Belknap Press of Harvard University Press.

Schwab, A. J. (2002). "The Classification Matrices as a Measure of Model Accuracy." Retrieved 6-27-15, 2015, from http://www.utexas.edu/courses/schwab/sw388r7/Tutorials/RulonMulitNomialLogisticRegressionProblem_doc_html/026_The_Classification_Matrices_as_a_Measure_of_Model_Accuracy.html.

Sewell, W. R. D. and S. M. Phillips (1979). "Models for the evaluation of public participation programmes." Natural Resources Journal **19**(337-338).

Shindler, B. and J. Neburka (1997). "Public Participation in Forest Planning: 8 Attributes of Success." Journal of Foresty **January**: 17-19.

Silva, C. L. and H. C. Jenkins-Smith (2007). "The Precautionary Principle in Context: U.S. and E.U. Scientists' Prescriptions for Policy in the Face of Uncertainty." Social Science Quarterly **88**(3): 640-663.
Smith, A. (1904). "An Inquiry into the Nature and Causes of the Wealth of Nations." Retrieved 6-14-15, 2015, from http://www.econlib.org/cgi-bin/cite.pl.

Stewart, T. R., R. L. Dennis and D. W. Ely (1984). "Citizen Participation and Judgment in Policy Analysis: A Case Study of Urban Air Quality Policy." Policy Sciences **17**(1): 67-87.

Swedlow, B. (2011). "Cultural Surprises as Sources of Sudden, Big Policy Change." PS **October**: 736-739.

Swedlow, B. (2011a). "A Cultural Theory of Politics." PS **October**: 703-710.

Tait, M. (2011). "Trust and the Public Interest in the Micropolitics of Planning Practice." Journal of Planning Education and Research **31**(2): 157-171.

Thomas, J. C. (1995). Public Participation in Public Decisions: New Skills and Strategies for Public Managers. San Francisco, Jossey-Bass.

Thompson, M., R. Ellis and A. Wildavsky (1990). Cultural Theory. Boulder, San Francisco, and Oxford, Westview Press.

Thompson, M. and A. Wildavsky (1986). "A Poverty of Distinction: From Economic Hegemony to Cultural Heterogeneity in the Classification of Poor People." Policy Sciences **19**(2): 163-199.

Trousett, S., K. Gupta, H. C. Jenkins-Smith, C. L. Silva and K. G. Herron (2015). "Degrees of Engagement: Using Cultural Worldviews to Explain Variations in Public Preferences for Engagement in the Policy Process." Policy Studies Journal **43**(1): 44-69.

Tuler, S. and T. Webler (1999). "Voices from the Forest: What Participants Expect of a Public Participation Process." Society & Natural Resources **12**(5): 437-453.

Twight, B. W. and M. S. Carroll (1983). "Workshops in Public Involvement: Do They Help Find Common Ground?" Journal of Foresty **November**: 1983.

van Heffen, O. and P.-J. Klok (2003). "Cultural Theory Revised: Only Five Cultures or More?" Contemporary Political Thought **2**: 289-306.

Wang, X. (2001). "Assessing Public Participation in U.S. Cities." Public Performance & Management Review **24**(4): 322-336.

Wang, X. and M. van Wart (2007). "When Public Participation in Administration Leads to Trust: An Empirical Assessment of Managers' Perceptions." Public Administration Review **67**(2): 265-278.

Webler, T. (1999). "The craft and theory of public participation: a dialectical process." Journal of Risk Research **2**(1): 55-71.

Webler, T. a. T., Seth (2000). "Fairness and Competence in Citizen Participation: Theoretical Reflections From a Case Study." Administration & Society **32**(5): 566-595.

Weidemann, P. M. and S. Femers (1993). "Public participation in waste management decision making: Analysis and management of conflicts." Journal of Hazardous Materials **33**(3): 355-368.

Wildavsky, A. (1992). "Indispensible Framework of Just Another Ideology?: Prisoner's Dilemma as an Antihierarchical Game." Rationality and Society **4**(1): 8-23.

Wildavsky, A. (2006). Cultural Analysis. Politics, Public Law and Administration. New Brunswick, NJ, Transaction Publishers.

Wildavsky, A. and K. Dake (1990). "Theories of Risk Perception: Who Fears What and Why? ." Daedalus **119**(4): 41-60.

Williams, B., T. Brown and A. Onsman (2010). "Exploratory Factor Analysis: A five-step guide for novices." Australian Journal of Paramedicine **8**(3): 1-13.

Willis, G. B. (2005). Cognitive Interviewing. Thousand Oaks, CA, Sage Publications.

Wirt, F. M. and L. J. Christovich (1984). "The Political World of Urban Planners: A Report from the Field." Journal of Planning Education and Research **3**(2): 93-101.

Yankelovich, D. (1991). Coming to public judgment: making democracy work in a complex world. Syracuse, NY, Syracuse University Press.

Appendix A – Mapping Public Participation Mechanisms onto Fung's Democracy Cube

Mechanism Name	Participants Dimension	Comm. & Decision Mode Dimension	Authority & Power Dimension
Advisory Committee (other than CAC) – task force*	7	3	2
Booth at a Public Event	7	6	5
Brochures	8	6	5
Charettes	6	2	4
Focus Groups	3	5	4
Games	6	4	3
Small Group Briefings	6	5	4
Interviews	6	5	3
Kiosk/Interactive Display	7	5	3
Multilingual Translation	7	5	4
Newsletters	7	6	5
General Newspaper	8	6	5
Targeted Newspaper	6	6	5
Open House Meeting	7	6	5
Press Release	8	6	5
Public Meeting	6	5	4
Radio/TV Ads	8	6	5
Simulation	7	4	4
Sociocultural Effects	4	2	3
Speakers Bureau	6	5	4
Special Transportation to Meetings	4	4	5
Survey Email	7	5	4
Survey Mail	4	5	4
Survey Phone	4	5	4
Survey In-Person	4	5	4
Phone Hotline	7	5	4
Transportation Faire	6	5	4
Videos	6	6	5
Visioning	6	2	4
Visual Preference Survey	7	5	4
Website-General Public Involvement	6	5	4
Website-Project Specific	6	5	4
Flyers	8	5	4
Audience Response System	6	5	4
Draft Document Sharing	6	6	5
Email Notifications	6	6	5
Newspaper Featured Stories	8	6	5

Outreach to Public Information Officers	2	6	5
Facebook Page	7	5	4
Twitter Account	7	6	5
Other Social Media	7	6	5
Post on Other's Websites	7	6	5
Post on Other's Facebook Page	7	5	4
Public Workshop	6	2	3

Appendix B – Initial Survey Instrument

Informed Consent Statement	**Responses**
Thank you very much for agreeing to participate in this project by taking this survey. The goal of this research project is to expand out understanding of those factors that affect the selection of public participation mechanisms in Long Range Transportation Plans (LRTP) developed by Metropolitan Planning Organizations in the United States. You were selected for participation in this project due to your role as someone who has participated in the development of your MPO's most recent LRTP. This survey will take about 15 minutes to complete. Any responses that you provide are voluntary. All responses are confidential and you will not be personally identified in any published research that emerges from this project. You are free to end your participation at any time during the survey. A summary of the findings of this survey will be shared with all survey participants. If you should have any questions, comments, or concerns please contact Aaron Smith- Walter at aaronsw1@vt.edu. This study is being carried out under the supervision of Brian J. Cook, Ph.D. from the Center for Public Administration and Policy at Virginia Tech. This project has received a review by the Institutional Research Board at Virginia Tech. If you have questions related to your rights as a human subjects participant, please contact: David M. Moore, moored@vt.edu; (540) 231-4991 Chair of the Virginia Tech Institutional Review Board for the Protection of Human Subjects	□ Proceed with Survey
Demographics and Background Questions	**Responses**
How many years have you worked in your present position at this MPO? Please indicate your sex. Please indicate the highest level of education you have received. Please indicate the subject of study of your highest degree (for example, Civil Engineering, Urban Planning, Public Administration).	[User Text Entry] □ Male □ Female □ Prefer not to say. □ Less than High School □ High School/GED □ Some College □ 2-year College Degree □ 4-year College Degree □ Masters Degree □ Doctoral Degree □ Professional Degree (JD,MD) [User Text Entry]
Role in Plan Development	
"Please indicate how much control or influence you personally had over the development of the public	□ Development of Long Range Transportation/Metropolitan Transportation Plan was

participation portion of your MPO's most recent Long Range Transportation Plan/Metropolitan Transportation Plan?"	contracted out to another organization or agency. □ No influence □ Little influence □ Moderate influence □ Significant influence □ Complete influence
→ **Skip-Logic Follow Up for Agencies Indicating They Contracted Out Development of LRTP** "Please Identify the organization or agency that was responsible for the development of the public participation portion of your MPO's most recent Long Range Transportation Plan?"	□ Please identify the organization or agency that was responsible for the development of the public participation portion of your MPO's most recent Long Range Transportation Plan/Metropolitan Transportation Plan
Information Statement The goal of this research project is to expand our understanding of those factors that affect the selection of public participation mechanisms in Long Range Transportation Plans (LRTPs) (also called Metropolitan Transportation Plans) in Metropolitan Planning Organizations in the United States. Specifically, this research employ a theory known as *Cultural Theory* to explore the way that a particular worldview held by planners may impact their selection of public participation mechanisms. Cultural theory holds that there are stable worldviews and that each of these views has its own distinct understanding of democracy. No one view is superior to any other, instead, they are simply ways of organizing social relations and each has its merits. The following questions are designed to help the researchers understand your particular worldview.	
Cultural Worldviews (Paragraph Style) **Hierarchist Worldview** I am more comfortable when I know who is, and who is not, a part of my group, and loyalty to the group is important to me. I prefer to know who is in charge and to have clear rules and procedures; those who are in charge should punish those who break the rules. I like to have my responsibilities clearly defined, and I believe people should be rewarded based on the position they hold and their competence. Most of the time, I trust those with authority and expertise to do what is right for society.	□ Completely Disagree □ Mostly Disagree □ Somewhat Disagree □ Slightly Disagree □ Neither Disagree nor Agree □ Slightly Agree □ Somewhat Agree □ Mostly Agree □ Completely Agree
Egalitarian Worldview Much of society today is unfair and corrupt, and my most important contributions are made as a member of a group that promotes justice and equality. Within my group, everyone should play an equal role without differences in rank or authority. It is easy to lose track of what is important, so I have to keep a close eye on the actions of my group. It is not enough to provide equal	□ Completely Disagree □ Mostly Disagree □ Somewhat Disagree □ Slightly Disagree □ Neither Disagree nor Agree □ Slightly Agree □ Somewhat Agree □ Mostly Agree □ Completely Agree

opportunities; we also have to try to make outcomes more equal.	□ Completely Disagree □ Mostly Disagree □ Somewhat Disagree □ Slightly Disagree □ Neither Disagree nor Agree □ Slightly Agree □ Somewhat Agree □ Mostly Agree □ Completely Agree
Individualist Worldview Groups are not all that important to me. I prefer to make my own way in life without having to follow other people's rules. Rewards in life should be based on initiative, skill, and hard work, even if that results in inequality. I respect people based on what they do, not the positions or titles they hold. I like relationships that are based on negotiated "give and take" rather than on status. Everyone benefits when individuals are allowed to compete.	□ Completely Disagree □ Mostly Disagree □ Somewhat Disagree □ Slightly Disagree □ Neither Disagree nor Agree □ Slightly Agree □ Somewhat Agree □ Mostly Agree □ Completely Agree
Fatalist Worldview Life is unpredictable and I have very little control. I tend not to join groups, and I try not to get involved because I can't make much difference anyway. Most of the time other people make all the rules; I just abide by them. Getting along in life is largely a matter of doing the best I can with what comes my way, so I just try to take care of myself and the people closest to me. It's best to just go with the flow, because whatever will be will be.	
<u>Cultural Worldviews (12 – Item Battery)</u>	
Egalitarian Worldview "What society needs is a fairness revolution to make the distribution of goods more equal.[1]"	□ Strongly Disagree □ Disagree □ Slightly Disagree □ Neither Disagree Nor Disagree □ Slightly Agree □ Agree □ Strongly Agree
"Society works best if power is shared equally.[1]"	□ Strongly Disagree □ Disagree □ Slightly Disagree □ Neither Disagree Nor Disagree □ Slightly Agree □ Agree □ Strongly Agree
"It is our responsibility to reduce differences in income between the rich and the poor.[1]"	□ Strongly Disagree □ Disagree □ Slightly Disagree □ Neither Disagree Nor Disagree □ Slightly Agree □ Agree

	□ Strongly Agree
Individualist Worldview "Even if some people are at a disadvantage, it is best for society to let people succeed or fail on their own.[1]"	□ Strongly Disagree □ Disagree □ Slightly Disagree □ Neither Disagree Nor Disagree □ Slightly Agree □ Agree □ Strongly Agree
"Even the disadvantaged should have to make their own way in the world.[1]"	□ Strongly Disagree □ Disagree □ Slightly Disagree □ Neither Disagree Nor Disagree □ Slightly Agree □ Agree □ Strongly Agree
"We are all better off when we compete as individuals.[1]"	□ Strongly Disagree □ Disagree □ Slightly Disagree □ Neither Disagree Nor Disagree □ Slightly Agree □ Agree □ Strongly Agree
Hierarchist Worldview "The best way to get ahead in life is to work hard and do what you are told to do.[1]"	□ Strongly Disagree □ Disagree □ Slightly Disagree □ Neither Disagree Nor Disagree □ Slightly Agree □ Agree □ Strongly Agree
"Society is in trouble because people do not obey those in authority.[1]"	□ Strongly Disagree □ Disagree □ Slightly Disagree □ Neither Disagree Nor Disagree □ Slightly Agree □ Agree □ Strongly Agree
"Society would be much better off if we imposed strict and swift punishment on those who break the rules.[1]"	□ Strongly Disagree □ Disagree □ Slightly Disagree □ Neither Disagree Nor Disagree □ Slightly Agree □ Agree □ Strongly Agree
	□ Strongly Disagree □ Disagree □ Slightly Disagree

Fatalist Orientation "Most of the important things that take place in life happen by random chance.[3]"	□ Neither Disagree Nor Disagree □ Slightly Agree □ Agree □ Strongly Agree
"No matter how hard we try, the course of our lives is largely determined by forces outside our control.[3]"	□ Strongly Disagree □ Disagree □ Slightly Disagree □ Neither Disagree Nor Disagree □ Slightly Agree □ Agree □ Strongly Agree
"It would be pointless to make serious plans in such an uncertain world.[3]"	□ Strongly Disagree □ Disagree □ Slightly Disagree □ Neither Disagree Nor Disagree □ Slightly Agree □ Agree □ Strongly Agree
<u>Factors influencing Design of Participation Portion of LRTP</u> Please indicate the importance of each of the following factors in your decision regarding the design and implementation of the your most recently adopted LRTP's goals, objectives, and programs related to public participation.	
Type of Project	□ Not a factor □ A small factor □ A moderate factor □ A strong factor □ Among the most important factors
Environmental Justice Issues	□ Not a factor □ A small factor □ A moderate factor □ A strong factor □ Among the most important factors
Reducing Risk Exposure	□ Not a factor □ A small factor □ A moderate factor □ A strong factor □ Among the most important factors
Level of Controversy	□ Not a factor □ A small factor □ A moderate factor □ A strong factor □ Among the most important factors
Agency Input/Priorities	□ Not a factor □ A small factor □ A moderate factor □ A strong factor □ Among the most important factors

Need for Community Input and Concerns	□ Not a factor □ A small factor □ A moderate factor □ A strong factor □ Among the most important factors
Legal Requirements	□ Not a factor □ A small factor □ A moderate factor □ A strong factor □ Among the most important factors
Safety Issues	□ Not a factor □ A small factor □ A moderate factor □ A strong factor □ Among the most important factors
Available Budget	□ Not a factor □ A small factor □ A moderate factor □ A strong factor □ Among the most important factors
Political Priorities	□ Not a factor □ A small factor □ A moderate factor □ A strong factor □ Among the most important factors
Project Schedule	□ Not a factor □ A small factor □ A moderate factor □ A strong factor □ Among the most important factors
Other Factor #1	□ Not a factor □ A small factor □ A moderate factor □ A strong factor □ Among the most important factors
Other Factor #2	□ Not a factor □ A small factor □ A moderate factor □ A strong factor □ Among the most important factors
Other Factor #3	□ Not a factor □ A small factor □ A moderate factor □ A strong factor □ Among the most important factors

Participation Mechanisms Used in Next LRTP/MTP If you could choose your *ideal public participation mechanism(s)* for inclusion in the next LRTP/MTP development which would you select? Please choose all that apply.[4]"	□ Advisory Committee or Task Force (other than CAC) □ Booth at public event □ Brochures □ Charettes □ Focus groups □ Games □ Individual/Small group briefings □ Interviews □ Kiosks or Interactive Displays □ Multilingual translations □ Newsletters □ Newspaper ad (general newspaper) □ Newspaper ad (targeted newspaper) □ Open house meetings □ Press release □ Public meetings □ Radio or Television ads □ Simulation of project alternatives □ Sociocultural effects evaluation □ Speaker's bureau □ Special transportation to meetings (for elderly and/or disabled citizens) □ Survey (internet/e-mail) □ Survey (mail) □ Survey (telephone)	□ Survey (in-person) □ Telephone hot lines □ Transportation fair □ Videos □ Visioning-scenario building □ Visual preference survey □ Web page (general public involvement site) □ Web page (project specific) □ Flyers □ Audience Response System □ Draft Document Sharing □ E-mail notifications □ Newspaper featured stories □ Outreach to local public information officers □ Facebook page □ Twitter account □ Other social media □ Postings on websites of other member agencies/jurisdictions □ Posting on Facebook page of member agencies/jurisdictions □ Public workshop □ Other mechanism #1 □ Other mechanism #2 □ Other mechanism #3 □ Other mechanism #4
Ranking Selected Mechanism Please rank in order of importance (with 1 being the most important) the mechanisms you selected in the previous question.	[Drag and Drop Ordering: Options will vary based on individual's choice(s) in previous question.	
Thank You Message Thank you very much for taking the time to complete this survey.		

Appendix C – Final Survey Instrument

Informed Consent Statement	**Responses**
Thank you very much for agreeing to participate in this project by taking this survey. The goal of this research project is to expand out understanding of those factors that affect the selection of public participation mechanisms in Long Range Transportation Plans (LRTP) developed by Metropolitan Planning Organizations in the United States. You were selected for participation in this project due to your role as someone who has participated in the development of your MPO's most recent LRTP. This survey will take about 15 minutes to complete. Any responses that you provide are voluntary. All responses are confidential and you will not be personally identified in any published research that emerges from this project. You are free to end your participation at any time during the survey. A summary of the findings of this survey will be shared with all survey participants. If you should have any questions, comments, or concerns please contact Aaron Smith- Walter at aaronsw1@vt.edu. This study is being carried out under the supervision of Brian J. Cook, Ph.D. from the Center for Public Administration and Policy at Virginia Tech. This project has received a review by the Institutional Research Board at Virginia Tech. If you have questions related to your rights as a human subjects participant, please contact: David M. Moore, moored@vt.edu; (540) 231-4991 Chair of the Virginia Tech Institutional Review Board for the Protection of Human Subjects	□ Proceed with Survey □ Decline to Participate
Demographics and Background Questions	**Responses**
How many years have you worked in your present position at this MPO? Please indicate your sex. Please indicate the highest level of education you have received. Please indicate the subject of study of your highest degree (for example, Civil Engineering, Urban Planning, Public Administration).	[User Text Entry] □ Male □ Female □ Prefer not to say. □ Less than High School □ High School/GED □ Some College □ 2-year College Degree □ 4-year College Degree □ Masters Degree □ Doctoral Degree □ Professional Degree (JD,MD) [User Text Entry]

Role in Plan Development "Please indicate how much control or influence you personally had over the development of the public participation portion of your MPO's most recent Long Range Transportation Plan/Metropolitan Transportation Plan?"	□ Development of Long Range Transportation/Metropolitan Transportation Plan was contracted out to another organization or agency. □ No influence □ Little influence □ Moderate influence □ Significant influence □ Complete influence
→ **Skip-Logic Follow Up for Agencies Indicating They Contracted Out Development of LRTP** "Please Identify the organization or agency that was responsible for the development of the public participation portion of your MPO's most recent Long Range Transportation Plan?"	□ Please identify the organization or agency that was responsible for the development of the public participation portion of your MPO's most recent Long Range Transportation Plan/Metropolitan Transportation Plan
Factors influencing Design of Participation Portion of LRTP Please indicate the importance of each of the following factors in your decision regarding the design and implementation of the your most recently adopted LRTP's goals, objectives, and programs related to public participation. Type of Project	□ Not a factor □ A small factor □ A moderate factor □ A strong factor □ Among the most important factors
Environmental Justice Issues	□ Not a factor □ A small factor □ A moderate factor □ A strong factor □ Among the most important factors
Reducing Risk Exposure	□ Not a factor □ A small factor □ A moderate factor □ A strong factor □ Among the most important factors
Level of Controversy	□ Not a factor □ A small factor □ A moderate factor □ A strong factor □ Among the most important factors
Agency Input/Priorities	□ Not a factor □ A small factor □ A moderate factor □ A strong factor □ Among the most important factors
	□ Not a factor □ A small factor

Need for Community Input and Concerns	□ A moderate factor □ A strong factor □ Among the most important factors	
Legal Requirements	□ Not a factor □ A small factor □ A moderate factor □ A strong factor □ Among the most important factors	
Safety Issues	□ Not a factor □ A small factor □ A moderate factor □ A strong factor □ Among the most important factors	
Available Budget	□ Not a factor □ A small factor □ A moderate factor □ A strong factor □ Among the most important factors	
Political Priorities	□ Not a factor □ A small factor □ A moderate factor □ A strong factor □ Among the most important factors	
Project Schedule	□ Not a factor □ A small factor □ A moderate factor □ A strong factor □ Among the most important factors	
Other Factor #1	□ Not a factor □ A small factor □ A moderate factor □ A strong factor □ Among the most important factors	
Other Factor #2	□ Not a factor □ A small factor □ A moderate factor □ A strong factor □ Among the most important factors	
Other Factor #3	□ Not a factor □ A small factor □ A moderate factor □ A strong factor □ Among the most important factors	
Participation Mechanisms Used in Next LRTP/MTP		

If you could choose your *ideal public participation mechanism(s)* for inclusion in the next LRTP/MTP development which would you select? Please choose all that apply.[4]"	□ Advisory Committee or Task Force (other than CAC) □ Booth at public event □ Brochures □ Charettes □ Focus groups □ Games □ Individual/Small group briefings □ Interviews □ Kiosks or Interactive Displays □ Multilingual translations □ Newsletters □ Newspaper ad (general newspaper) □ Newspaper ad (targeted newspaper) □ Open house meetings □ Press release □ Public meetings □ Radio or Television ads □ Simulation of project alternatives □ Sociocultural effects evaluation □ Speaker's bureau □ Special transportation to meetings (for elderly and/or disabled citizens) □ Survey (internet/e-mail) □ Survey (mail) □ Survey (telephone)	□ Survey (in-person) □ Telephone hot lines □ Transportation fair □ Videos □ Visioning-scenario building □ Visual preference survey □ Web page (general public involvement site) □ Web page (project specific) □ Flyers □ Audience Response System □ Draft Document Sharing □ E-mail notifications □ Newspaper featured stories □ Outreach to local public information officers □ Facebook page □ Twitter account □ Other social media □ Postings on websites of other member agencies/jurisdictions □ Posting on Facebook page of member agencies/jurisdictions □ Public workshop □ Other mechanism #1 □ Other mechanism #2 □ Other mechanism #3 □ Other mechanism #4
Ranking Selected Mechanism Please rank in order of importance (with 1 being the most important) the mechanisms you selected in the previous question.	[Drag and Drop Ordering: Options will vary based on individual's choice(s) in previous question.	
Information Statement The goal of this research project is to expand our understanding of those factors that affect the selection of public participation mechanisms in Long Range Transportation Plans (LRTPs) (also called Metropolitan Transportation Plans) in Metropolitan Planning Organizations in the United States. Specifically, this research employ a theory known as *Cultural Theory* to explore the way that a particular worldview held by planners may impact their selection of public participation mechanisms. Cultural theory holds that there are stable worldviews and that each of these views has its own distinct understanding of democracy. No one view is		

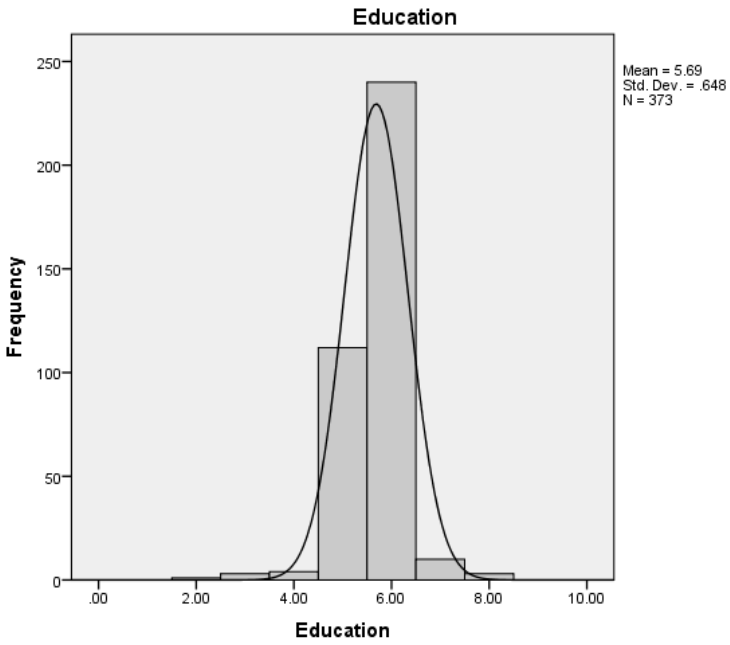
superior to any other, instead, they are simply ways of organizing social relations and each has its merits. The following questions are designed to help the researchers understand your particular worldview.	
Cultural Worldviews (12 – Item Battery/Randomized)	
Egalitarian Worldview "What society needs is a fairness revolution to make the distribution of goods more equal.[1]"	□ Strongly Disagree □ Disagree □ Slightly Disagree □ Neither Disagree Nor Disagree □ Slightly Agree □ Agree □ Strongly Agree
"Society works best if power is shared equally.[1]"	□ Strongly Disagree □ Disagree □ Slightly Disagree □ Neither Disagree Nor Disagree □ Slightly Agree □ Agree □ Strongly Agree
"It is our responsibility to reduce differences in income between the rich and the poor.[1]"	□ Strongly Disagree □ Disagree □ Slightly Disagree □ Neither Disagree Nor Disagree □ Slightly Agree □ Agree □ Strongly Agree
Individualist Worldview "Even if some people are at a disadvantage, it is best for society to let people succeed or fail on their own.[1]"	□ Strongly Disagree □ Disagree □ Slightly Disagree □ Neither Disagree Nor Disagree □ Slightly Agree □ Agree □ Strongly Agree
"Even the disadvantaged should have to make their own way in the world.[1]"	□ Strongly Disagree □ Disagree □ Slightly Disagree □ Neither Disagree Nor Disagree □ Slightly Agree □ Agree □ Strongly Agree
"We are all better off when we compete as individuals.[1]"	□ Strongly Disagree □ Disagree □ Slightly Disagree □ Neither Disagree Nor Disagree □ Slightly Agree □ Agree □ Strongly Agree

Hierarchist Worldview "The best way to get ahead in life is to work hard and do what you are told to do.[1]"	□ Strongly Disagree □ Disagree □ Slightly Disagree □ Neither Disagree Nor Disagree □ Slightly Agree □ Agree □ Strongly Agree
"Society is in trouble because people do not obey those in authority.[1]"	□ Strongly Disagree □ Disagree □ Slightly Disagree □ Neither Disagree Nor Disagree □ Slightly Agree □ Agree □ Strongly Agree
"Society would be much better off if we imposed strict and swift punishment on those who break the rules.[1]"	□ Strongly Disagree □ Disagree □ Slightly Disagree □ Neither Disagree Nor Disagree □ Slightly Agree □ Agree □ Strongly Agree
Fatalist Orientation "Most of the important things that take place in life happen by random chance.[3]"	□ Strongly Disagree □ Disagree □ Slightly Disagree □ Neither Disagree Nor Disagree □ Slightly Agree □ Agree □ Strongly Agree
"No matter how hard we try, the course of our lives is largely determined by forces outside our control.[3]"	□ Strongly Disagree □ Disagree □ Slightly Disagree □ Neither Disagree Nor Disagree □ Slightly Agree □ Agree □ Strongly Agree
"It would be pointless to make serious plans in such an uncertain world.[3]"	□ Strongly Disagree □ Disagree □ Slightly Disagree □ Neither Disagree Nor Disagree □ Slightly Agree □ Agree □ Strongly Agree

Appendix D – Descriptive Statistics for non-GGCT Independent Variables with Histograms

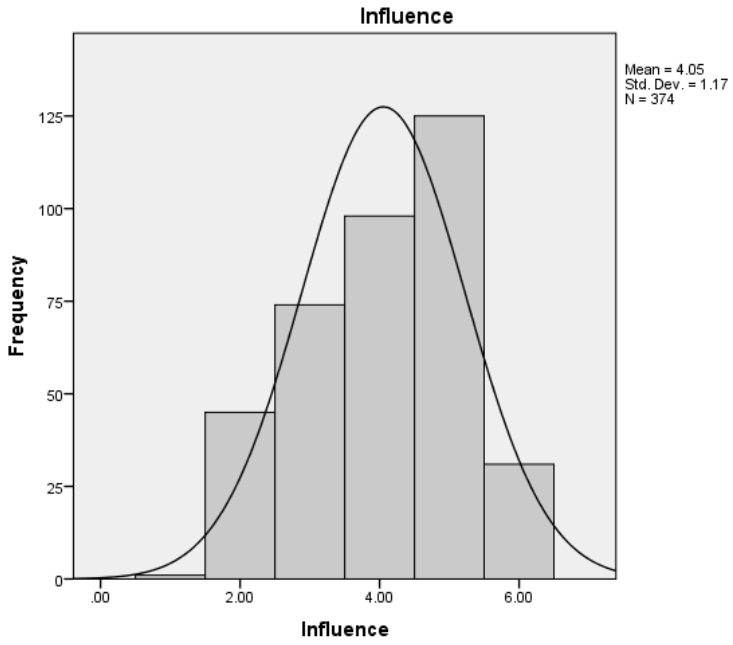
Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High School/GED	1	.3	.3	.3
	Some College	3	.8	.8	1.1
	2-Year College Degree	4	1.1	1.1	2.1
	4-Yeah College Degree	112	29.9	30.0	32.2
	Masters Degree	240	64.0	64.3	96.5
	Doctoral Degree (PhD)	10	2.7	2.7	99.2
	Professional Degree (JD,MD)	3	.8	.8	100.0
	Total	373	99.5	100.0	
Missing	.00	2	.5		
Total		375	100.0		



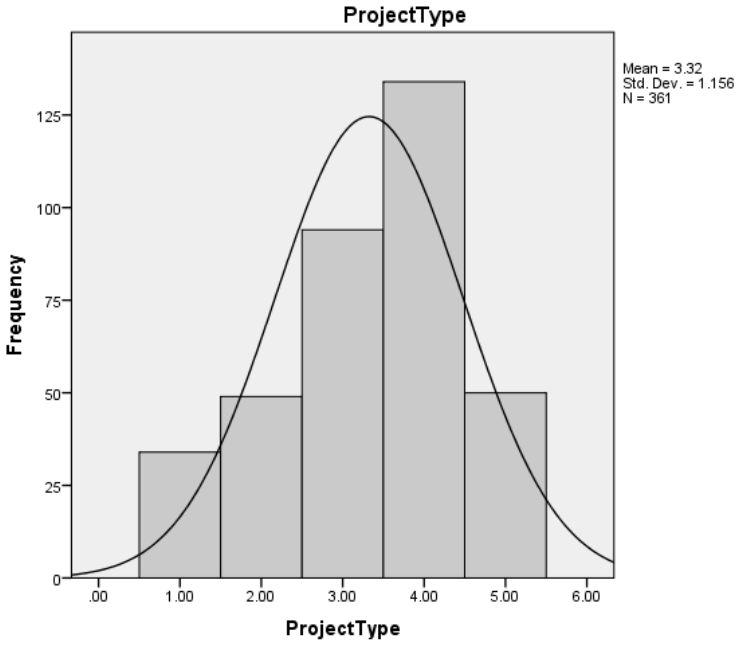
Influence

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Contracted Out	1	.3	.3	.3
	None	45	12.0	12.0	12.3
	Little	74	19.7	19.8	32.1
	Moderate	98	26.1	26.2	58.3
	Significant	125	33.3	33.4	91.7
	Complete	31	8.3	8.3	100.0
	Total	374	99.7	100.0	
Missing	.00	1	.3		
Total		375	100.0		



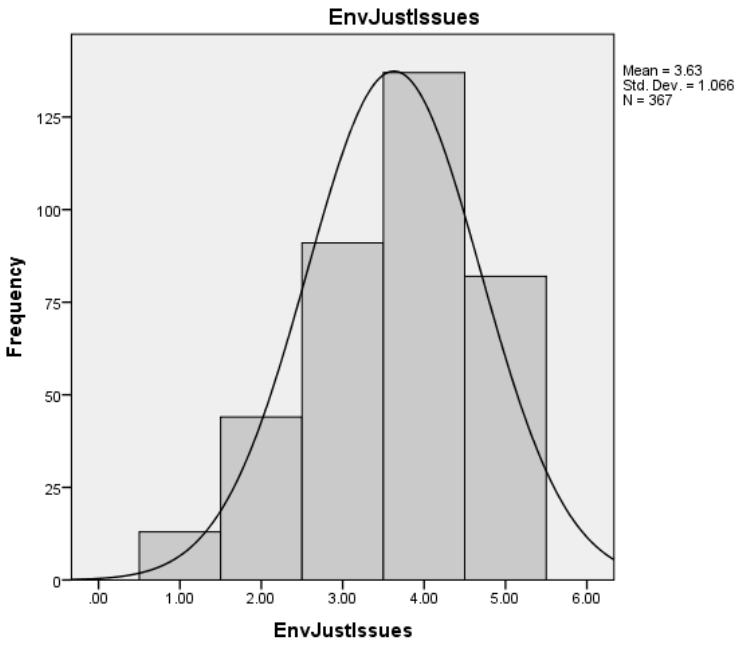
ProjectType

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not a Factor	34	9.1	9.4	9.4
	A small factor	49	13.1	13.6	23.0
	A moderate factor	94	25.1	26.0	49.0
	A strong factor	134	35.7	37.1	86.1
	Among the most important factors	50	13.3	13.9	100.0
	Total	361	96.3	100.0	
Missing	.00	14	3.7		
Total		375	100.0		



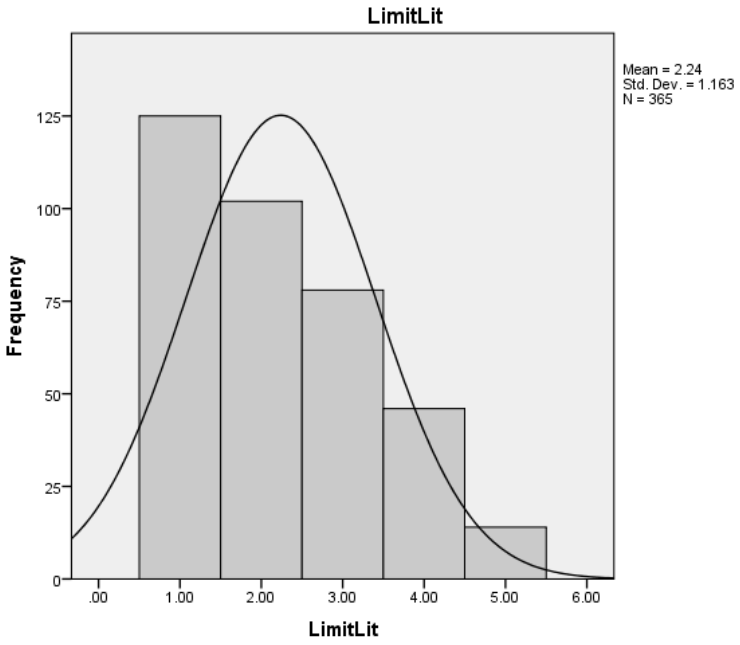
EnvJustIssues

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not a factor	13	3.5	3.5	3.5
	A small factor	44	11.7	12.0	15.5
	A moderate factor	91	24.3	24.8	40.3
	A strong factor	137	36.5	37.3	77.7
	Among the most important factors	82	21.9	22.3	100.0
	Total	367	97.9	100.0	
Missing	.00	8	2.1		
Total		375	100.0		



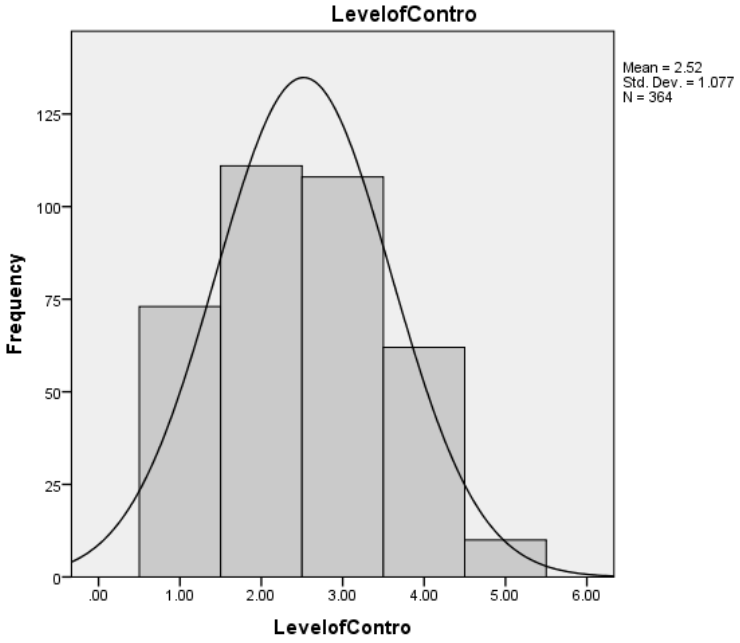
LimitLit

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not a factor	125	33.3	34.2	34.2
	A small factor	102	27.2	27.9	62.2
	A moderate factor	78	20.8	21.4	83.6
	A strong factor	46	12.3	12.6	96.2
	Among the most important factors	14	3.7	3.8	100.0
	Total	365	97.3	100.0	
Missing	.00	10	2.7		
Total		375	100.0		



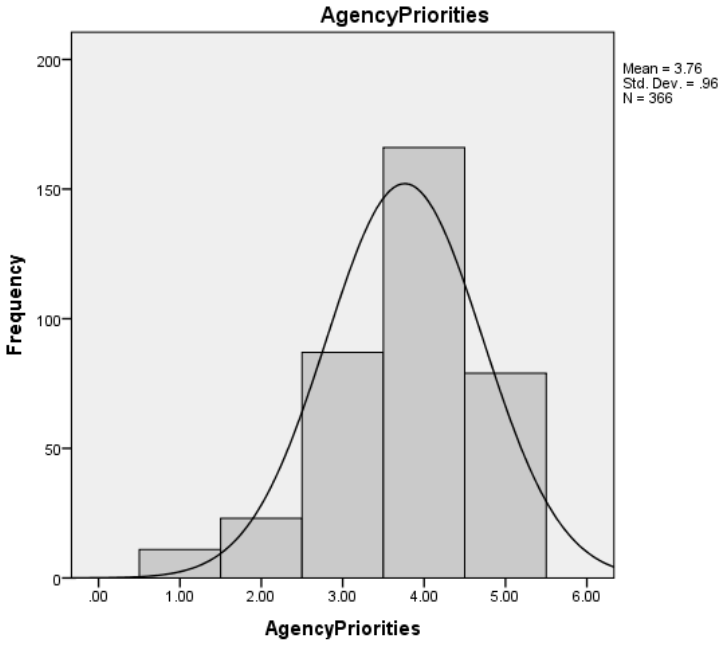
LevelofContro

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not a factor	73	19.5	20.1	20.1
	A small factor	111	29.6	30.5	50.5
	A moderate factor	108	28.8	29.7	80.2
	A strong factor	62	16.5	17.0	97.3
	Among the most important factors	10	2.7	2.7	100.0
	Total	364	97.1	100.0	
Missing	.00	11	2.9		
Total		375	100.0		



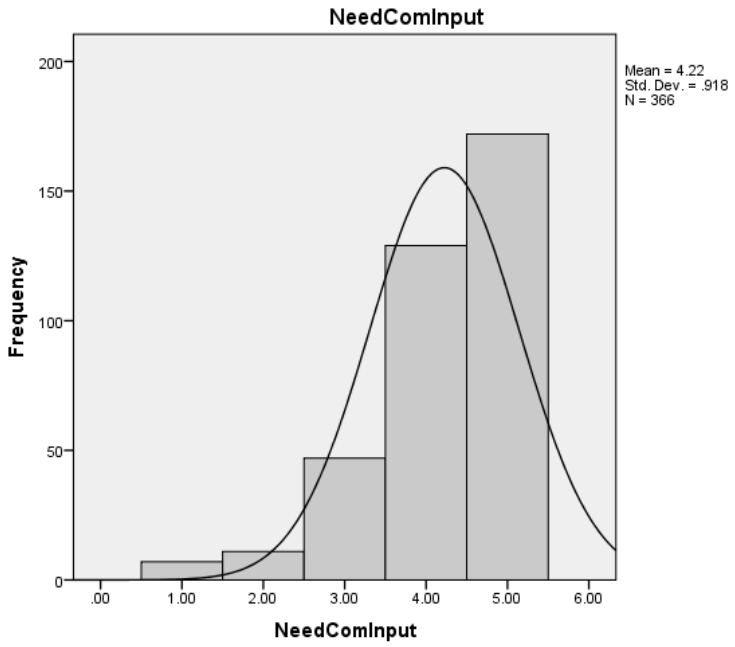
AgencyPriorities

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not a factor	11	2.9	3.0	3.0
	A small factor	23	6.1	6.3	9.3
	A moderate factor	87	23.2	23.8	33.1
	A strong factor	166	44.3	45.4	78.4
	Among the most important factors	79	21.1	21.6	100.0
	Total	366	97.6	100.0	
Missing	.00	9	2.4		
Total		375	100.0		



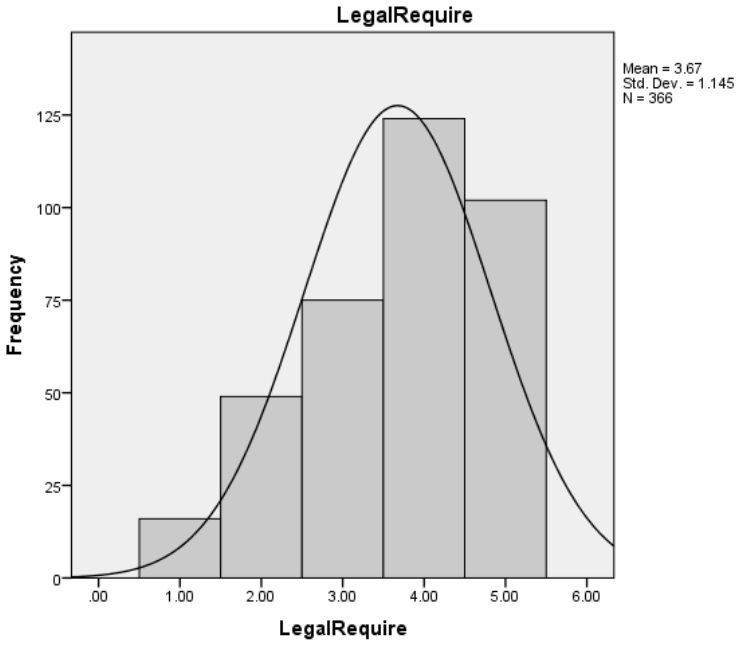
NeedComInput

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not a factor	7	1.9	1.9	1.9
	A small factor	11	2.9	3.0	4.9
	A moderate factor	47	12.5	12.8	17.8
	A strong factor	129	34.4	35.2	53.0
	Among the most important factors	172	45.9	47.0	100.0
	Total	366	97.6	100.0	
Missing	.00	9	2.4		
Total		375	100.0		



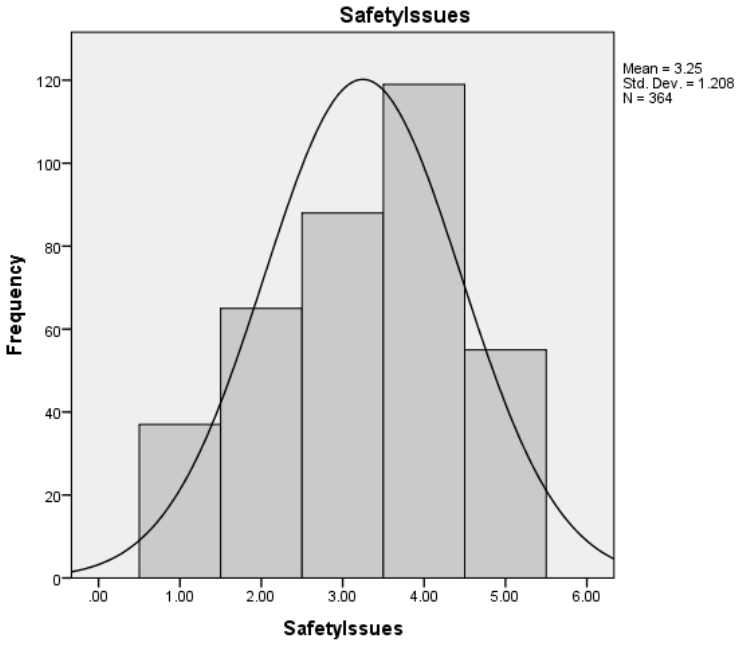
LegalRequire

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not a factor	16	4.3	4.4	4.4
	A small factor	49	13.1	13.4	17.8
	A moderate factor	75	20.0	20.5	38.3
	A strong factor	124	33.1	33.9	72.1
	Among the most important factors	102	27.2	27.9	100.0
	Total	366	97.6	100.0	
Missing	.00	9	2.4		
Total		375	100.0		



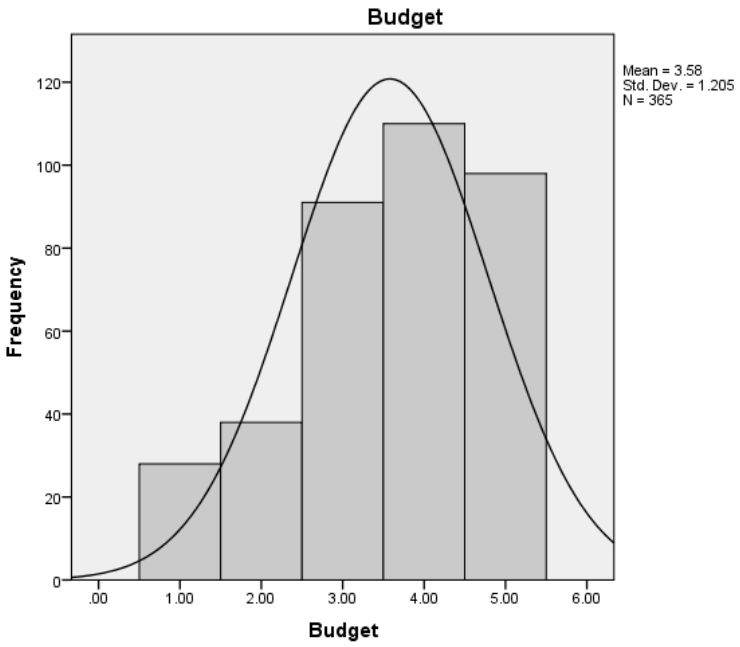
SafetyIssues

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not a factor	37	9.9	10.2	10.2
	A small factor	65	17.3	17.9	28.0
	A moderate factor	88	23.5	24.2	52.2
	A strong factor	119	31.7	32.7	84.9
	Among the most important factors	55	14.7	15.1	100.0
	Total	364	97.1	100.0	
Missing	.00	11	2.9		
Total		375	100.0		



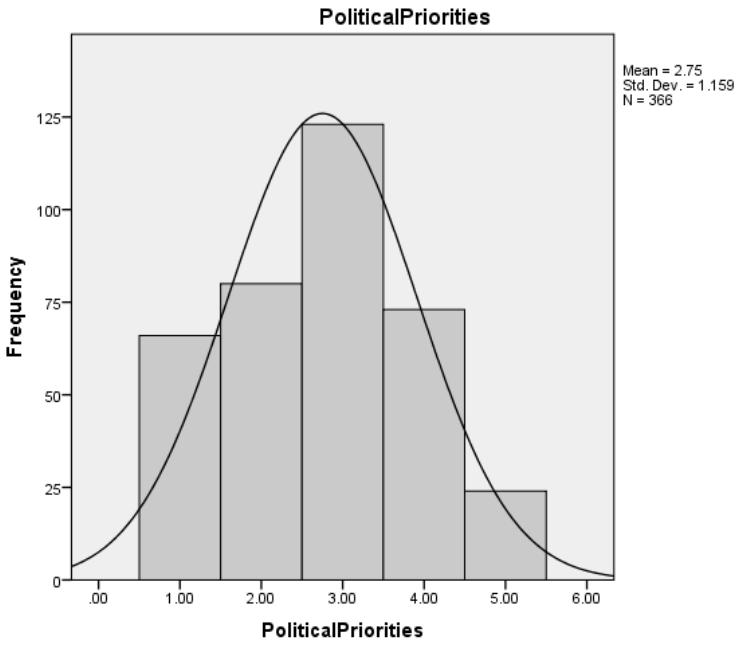
Budget

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not a factor	28	7.5	7.7	7.7
	A small factor	38	10.1	10.4	18.1
	A moderate factor	91	24.3	24.9	43.0
	A strong factor	110	29.3	30.1	73.2
	Among the most important factors	98	26.1	26.8	100.0
	Total	365	97.3	100.0	
Missing	.00	10	2.7		
Total		375	100.0		



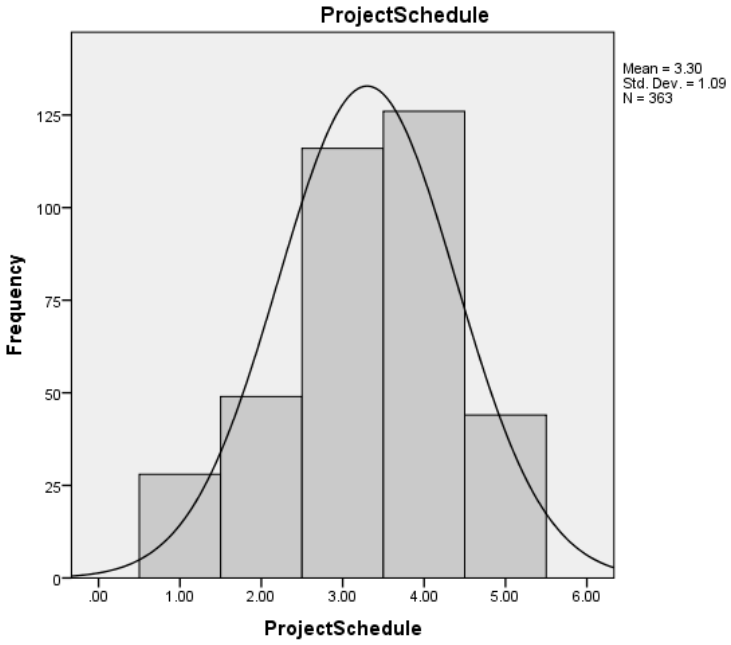
PoliticalPriorities

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not a factor	66	17.6	18.0	18.0
	A small factor	80	21.3	21.9	39.9
	A moderate factor	123	32.8	33.6	73.5
	A strong factor	73	19.5	19.9	93.4
	Among the most important factors	24	6.4	6.6	100.0
	Total	366	97.6	100.0	
Missing	.00	9	2.4		
Total		375	100.0		



ProjectSchedule

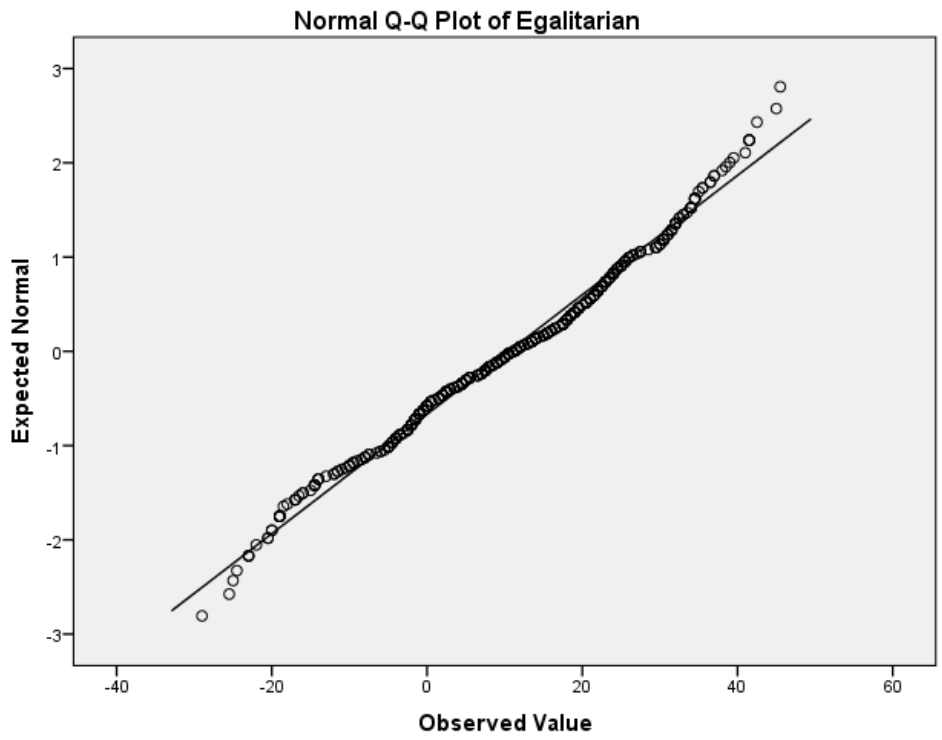
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not a factor	28	7.5	7.7	7.7
	A small factor	49	13.1	13.5	21.2
	A moderate factor	116	30.9	32.0	53.2
	A strong factor	126	33.6	34.7	87.9
	Among the most important factors	44	11.7	12.1	100.0
	Total	363	96.8	100.0	
Missing	.00	12	3.2		
Total		375	100.0		

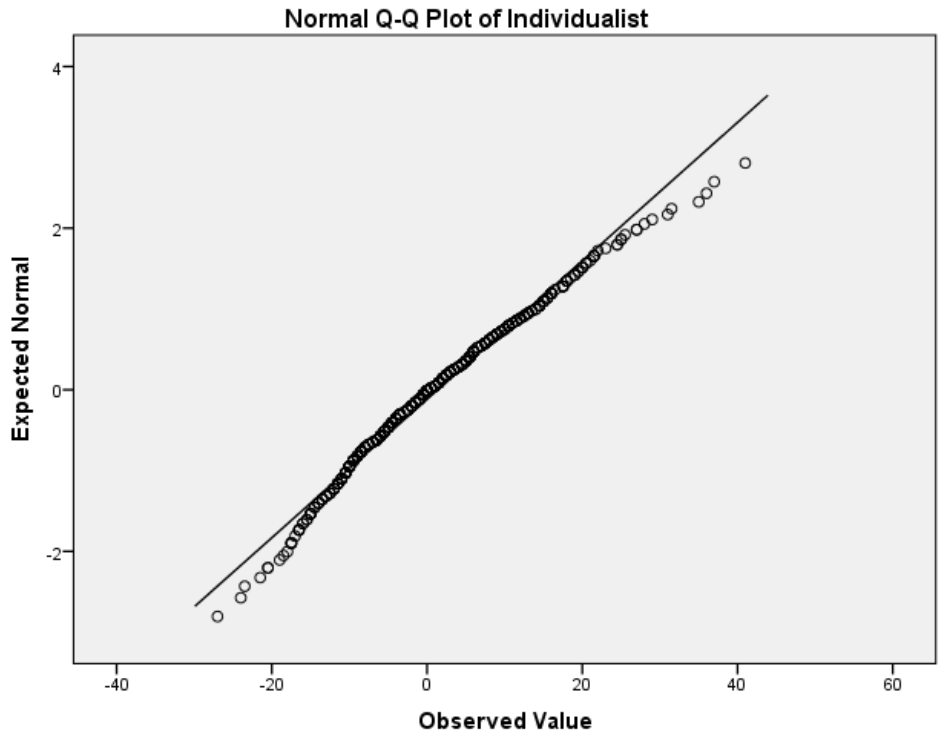


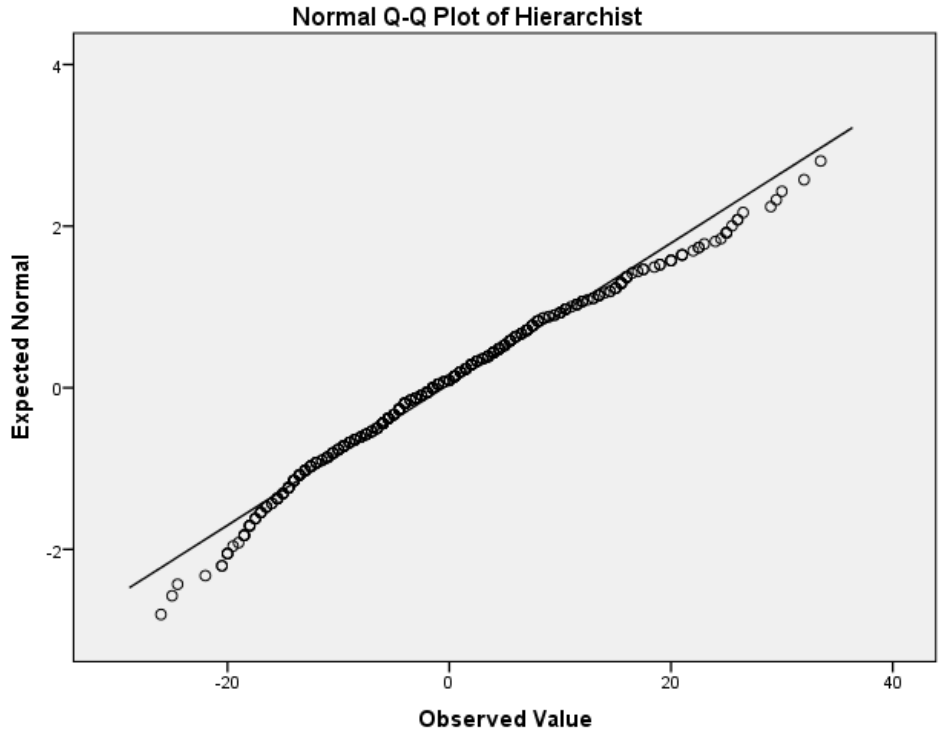
Appendix E – LRTP Mechanism Coding Breakdown

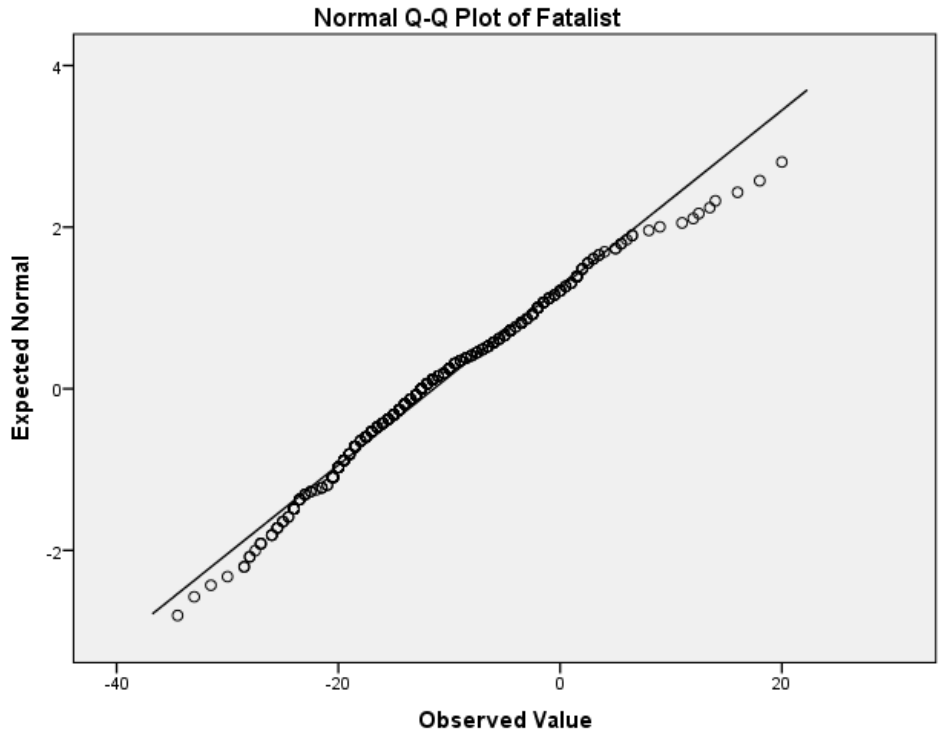
Mechanisms Listed in LRTP					
Advisory Committee (Other than CAC) - Task Force*		X		X	
Booth at public event*					
Brochures*				X	
Charette*		X			
Facilitator-Facilitated Meetings*					
Focus Groups*		X			
Games*			X		
Individual-Small Group Briefings*	X	X	X		X
Interviews*	X	X			
Kiosks-Interactive Displays*			X		
Multilingual Translations*				X	
Newsletters*					
Newspaper Ad (General Newspaper)*			X	X	
Newspaper Ad (Targeted Newspaper)*					
Open House Meetings*	X	X		X	
Press Release*				X	
Public Meetings/Hearings*	X	X	X	X	X
Radio-Television Ads*				X	
Simulation of Project Alternatives*					
Sociocultural Effects Evaluation*					
Speaker's Bureau*				X	
Special Transportation to Meetings*					
Survey, Internet/e-mail*		X			
Survey, mail*		X			
Survey, telephone*					
Telephone Hotlines*					
Transportation Fair*					
Videos*					
Visioning-Scenario Building*	X	X	X	X	X
Web Page (General Public Involvement Site)*					
Web Page (Project Specific)*	X	X	X	X	X
Other (Specify)*					
Flyers+	X		X	X	
Audience Response System+	X				
Draft Document Sharing Direct Distribution+	X			X	
Draft Document Sharing Deposited in Public Bldgs+				X	
Survey (in-person)+	X	X		X	X
E-mail Notifications+				X	
Newspapers (featured stories/articles)+				X	
Outreach to Public Information Officers+				X	
Facebook Page+				X	
Twitter Account+				X	
Website of Member Entities+				X	
Facebook Page of Member Entities+				X	
Public Workshop+		X			
Total Methods Identified in LRTP	**10**	**13**	**8**	**22**	**5**

Appendix F – Q-Q Plots for Independent GGCT Worldview Variables






Normal Q-Q Plot of Hierarchist
Expected Normal
Observed Value
4
2
0
-2
-20
0
20
40


Normal Q-Q Plot of Fatalist
Expected Normal
Observed Value
4
2
0
-2
-40
-20
0
20

Appendix G – Correlation

Statistics

	Educ	Influence	Project Type	EnvJust Issues	Limit Lit	LevelofContro	Agency Priorities	Need ComInput	Legal Require	Safety Issues	Budget	Political Priorities	Project Schedule
Valid	373	374	361	367	365	364	366	366	366	364	365	366	363
Missing	2	1	14	8	10	11	9	9	9	11	10	9	12
Mean	5.68	4.05	3.32	3.62	2.23	2.51	3.76	4.22	3.67	3.24	3.58	2.75	3.30
Median	6.00	4.00	4.00	4.00	2.00	2.00	4.00	4.00	4.00	3.00	4.00	3.00	3.00
Std. Dev.	.648	1.170	1.156	1.065	1.16	1.076	.959	.918	1.144	1.208	1.205	1.159	1.09
Skewness	-.957	-.286	-.483	-.525	.601	.210	-.761	-1.292	-.584	-.315	-.569	.050	-.412
Std. Error of Skewness	.126	.126	.128	.127	.128	.128	.128	.128	.128	.128	.128	.128	.128
Kurtosis	4.963	-.812	-.548	-.359	-.615	-.776	.510	1.655	-.533	-.844	-.523	-.806	-.396
Std. Error of Kurtosis	.252	.252	.256	.254	.255	.255	.254	.254	.254	.255	.255	.254	.255
Minimum	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Maximum	8.00	6.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00

Appendix H – *t*-Test Results (Full Tables)

Table 40 - Individualist vs. Hierarchist *t*-Test

	Individualist		Hierarchist	
Mechanism	**Mean**		**Mean**	**Sig.**
AdvisoryCmte	.3636		.4533	.249
BoothatPub*	.3068		.3467	.591
Brochures*	.1364		.1600	.674
Charettes*	.2273		.2000	.675
FocusGrps*	.4659		.4267	.618
Games*	.0568		.0800	.559
SmallGrpBrief	.2841		.1467	.564
Interviews	.1023		.1733	.196
Kiosks*	.2045		.2267	.734
MultilingualTrans*	.1477		.1733	.659
Newsletters	.1023		.2000	.087
GeneralNewspaper*	.1250		.1467	.689
TargetedNewspaper	.0114		.0533	.144
OpenHouse*	.4091		.4000	.907
PressRelease*	.2386		.2800	.550
PublicMeeting*	.4659		.5600	.234
RadioTVAds	.2386		.1467	.137
Simulation*	.1932		.1733	.746
SocioculturalEval*	.0227		.0133	.659
SpeakersBureau*	.1250		.0800	.352
SpecialTranstoMtg*	.1023		.0800	.626
InternetSurvey*	.4545		.4933	.624
MailSurvey*	.0909		.0800	.806
PhoneSurvey	.1250		.0667	.205
InPersonSurvey*	.2045		.1867	.776
TelephoneHotLines*	.0227		.0267	.872
TransportationFaire	.1364		.0667	.139
Videos	**.1250**		**.2533**	**.040**
Visioning*	.2386		.2000	.556
VisualPrefSurvey*	.1136		.0933	.675
GeneralWebSite	.3068		.4133	.161
ProjectSpecWebSite*	.2386		.2800	.550
Flyers*	.1250		.0933	.523
AudienceRespSyst*	.2045		.2400	.589
DraftDocShare	.0795		.1333	.274
EmailNotices	.3068		.4533	.056
NewspaperFeatStory	.2614		.1600	.113
OutreachtoPIOs	.2273		.1467	.188
FaceBookPage	.3636		.4533	.249
TwitterAcct*	.1932		.1733	.746
OtherSocMedia	.1136		.0400	.074
PostOthersWebPage*	.1591		.1333	.646
PostOthersFBPage*	.0909		.0933	.958
PublicWrkShp	.2386		.2133	.703
* Equal Variances Assumed				

Table 41- Egalitarian vs. Individualist *t*-Test

	Egalitarian		Individualist	
Mechanism	**Mean**		**Mean**	**Sig.**
AdvisoryCmte*	.4141		.3636	.414
BoothatPub	.2467		.3068	.295
Brochures	.0969		.1364	.346
Charettes	.3040		.2273	.160
FocusGrps*	.4361		.4659	.634
Games	.1189		.0568	.060
SmallGrpBrief*	.2731		.2841	.846
Interviews	.1498		.1023	.239
Kiosks*	.1894		.2045	.762
MultilingualTrans	**.2599**		**.1477**	**.020**
Newsletters	.1454		.1023	.283
GeneralNewspaper	.1013		.1250	.545
TargetedNewspaper	**.0485**		**.0114**	**.043**
OpenHouse*	.3744		.4091	.572
PressRelease	**.1189**		**.2386**	**.019**
PublicMeeting	.3480		.4659	.060
RadioTVAds	.1718		.2386	.202
Simulation	.2775		.1932	.105
SocioculturalEval	.0573		.0227	.122
SpeakersBureau	.1233		.1250	.968
SpecialTranstoMtg	.1762		.1023	.074
InternetSurvey*	.4405		.4545	.823
MailSurvey*	.0661		.0909	.449
PhoneSurvey*	.1410		.1250	.712
InPersonSurvey*	.1586		.2045	.333
TelephoneHotLines*	.0132		.0227	.546
TransportationFaire	.0925		.1364	.293
Videos*	.1454		.1250	.641
Visioning	**.4670**		**.2386**	**.000**
VisualPrefSurvey	**.2115**		**.1136**	**.026**
GeneralWebSite*	.3436		.3068	.536
ProjectSpecWebSite	.3348		.2386	.085
Flyers	.0529		.1250	.063
AudienceRespSyst*	.2423		.2045	.478
DraftDocShare*	.1145		.0795	.364
EmailNotices	.2247		.3068	.150
NewspaperFeatStory*	.3040		.2614	.457
OutreachtoPIOs	.1322		.2273	.061
FaceBookPage*	.3921		.3636	.643
TwitterAcct*	.1938		.1932	.990
OtherSocMedia*	.0881		.1136	.490
PostOthersWebPage*	.1322		.1591	.538
PostOthersFBPage*	.0749		.0909	.638
PublicWrkShp*	.2731		.2386	.534
* Equal Variances Assumed				

Table 42 - Egalitarian vs. Hierachist *t*-Test

	Egalitarian		Hierarchist	
Mechanism	**Mean**		**Mean**	**Sig.**
AdvisoryCmte*	.4141		.4533	.553
BoothatPub	.2467		.3467	.111
Brochures	.0969		.1600	.182
Charettes	.3040		.2000	.064
FocusGrps*	.4361		.4267	.887
Games*	.1189		.0800	.350
SmallGrpBrief	.2731		.1467	**.014**
Interviews*	.1498		.1733	.627
Kiosks*	.1894		.2267	.485
MultilingualTrans	.2599		.1733	.103
Newsletters	.1454		.2000	.296
GeneralNewspaper	.1013		.1467	.324
TargetedNewspaper*	.0485		.0533	.867
OpenHouse*	.3744		.4000	.694
PressRelease	.1189		.2800	**.005**
PublicMeeting	.3480		.5600	**.002**
RadioTVAds*	.1718		.1467	.613
Simulation	.2775		.1733	**.052**
SocioculturalEval	.0573		.0133	**.032**
SpeakersBureau	.1233		.0800	.261
SpecialTranstoMtg	.1762		.0800	**.018**
InternetSurvey*	.4405		.4933	.427
MailSurvey*	.0661		.0800	.682
PhoneSurvey	.1410		.0667	**.047**
InPersonSurvey*	.1586		.1867	.572
TelephoneHotLines*	.0132		.0267	.430
TransportationFaire*	.0925		.0667	.491
Videos	.1454		.2533	.055
Visioning	.4670		.2000	**.000**
VisualPrefSurvey	.2115		.0933	**.007**
GeneralWebSite*	.3436		.4133	.277
ProjectSpecWebSite*	.3348		.2800	.380
Flyers	.0529		.0933	.276
AudienceRespSyst*	.2423		.2400	.968
DraftDocShare*	.1145		.1333	.664
EmailNotices	.2247		.4533	**.001**
NewspaperFeatStory	.3040		.1600	**.007**
OutreachtoPIOs*	.1322		.1467	.751
FaceBookPage*	.3921		.4533	.351
TwitterAcct*	.1938		.1733	.695
OtherSocMedia	.0881		.0400	.106
PostOthersWebPage*	.1322		.1333	.979
PostOthersFBPage*	.0749		.0933	.610
PublicWrkShp	.2731		.2133	.288
* Equal Variances Assumed				

Table 43 - Individualist vs. Fatalist *t*-Test

	Individualist		Fatalist	
Mechanism	**Mean**		**Mean**	**Sig.**
AdvisoryCmte*	.3636		.3750	.950
BoothatPub*	.3068		.2500	.741
Brochures*	.1364		.1250	.929
Charettes*	.2273		.2500	.885
FocusGrps*	.4659		.3750	.626
Games*	.0568		.1250	.451
SmallGrpBrief*	.2841		.3750	.593
Interviews	.1023		.0000	.002
Kiosks*	.2045		.1250	.593
MultilingualTrans*	.1477		.2500	.451
Newsletters	.1023		.25000	.403
GeneralNewspaper	.1250		.0000	.001
TargetedNewspaper*	.0114		.0000	.765
OpenHouse	.4091		.2500	.380
PressRelease*	.2386		.1250	.469
PublicMeeting*	.4659		.6250	.394
RadioTVAds	.2386		.0000	.000
Simulation*	.1932		.2500	.703
SocioculturalEval*	.0227		.0000	.670
SpeakersBureau*	.1250		.2500	.328
SpecialTranstoMtg	.1023		.2500	.403
InternetSurvey	.4545		.2500	.267
MailSurvey*	.0909		.0000	.378
PhoneSurvey*	.1250		.0000	1.00
InPersonSurvey*	.2045		.3750	.269
TelephoneHotLines*	.0227		.0000	.670
TransportationFaire*	.1364		.1250	.929
Videos*	.1250		.1250	1.00
Visioning*	.2386		.3750	.399
VisualPrefSurvey*	.1136		.1250	.924
GeneralWebSite*	.3068		.2500	.741
ProjectSpecWebSite*	.2386		.1250	.469
Flyers*	.1250		.2500	.328
AudienceRespSyst*	.2045		.2500	.765
DraftDocShare*	.0795		.1250	.660
EmailNotices	.3068		.1250	.208
NewspaperFeatStory	.2614		.1250	.334
OutreachtoPIOs	.2273		.0000	.000
FaceBookPage*	.3636		.5000	.451
TwitterAcct*	.1932		.3750	.230
OtherSocMedia*	.1136		.1250	.932
PostOthersWebPage*	.1591		.1250	.802
PostOthersFBPage*	.0909		.0000	.378
PublicWrkShp*	.2386		.6250	.018
* Equal Variances Assumed				

Table 44 - Egalitarian vs. Fatalist *t*-Test

	Egalitarian		Fatalist	
Mechanism	**Mean**		**Mean**	**Sig.**
AdvisoryCmte*	.4141		.3750	.826
BoothatPub*	.2467		.2500	.983
Brochures*	.0969		.1250	.794
Charettes*	.3040		.2500	.745
FocusGrps*	.4361		.3750	.733
Games*	.1189		.1250	.959
SmallGrpBrief*	.2731		.3750	.529
Interviews	.1498		.0000	.000
Kiosks*	.1894		.1250	.648
MultilingualTrans*	.2599		.2500	.954
Newsletters*	.1454		.25000	.416
GeneralNewspaper	.1013		.0000	.000
TargetedNewspaper*	.0485		.0000	.526
OpenHouse	.3744		.2500	.478
PressRelease*	.1189		.1250	.959
PublicMeeting*	.3480		.6250	.109
RadioTVAds	.1718		.0000	.000
Simulation*	.2775		.2500	.865
SocioculturalEval*	.0573		.0000	.488
SpeakersBureau*	.1233		.2500	.293
SpecialTranstoMtg*	.1762		.2500	.594
InternetSurvey	.4405		.2500	.289
MailSurvey*	.0661		.0000	.455
PhoneSurvey*	.1410		.0000	.899
InPersonSurvey	.1586		.3750	.278
TelephoneHotLines*	.0132		.0000	.745
TransportationFaire*	.0925		.1250	.758
Videos*	.1454		.1250	.873
Visioning	.4670		.3750	.635
VisualPrefSurvey*	.2115		.1250	.556
GeneralWebSite*	.3436		.2500	.585
ProjectSpecWebSite	.3348		.1250	.143
Flyers	.0529		.2500	.269
AudienceRespSyst*	.2423		.2500	.960
DraftDocShare*	.1145		.1250	.928
EmailNotices*	.2247		.1250	.507
NewspaperFeatStory	.3040		.1250	.202
OutreachtoPIOs	.1322		.0000	.000
FaceBookPage*	.3921		.5000	.542
TwitterAcct*	.1938		.3750	.210
OtherSocMedia*	.0881		.1250	.721
PostOthersWebPage*	.1322		.1250	.953
PostOthersFBPage*	.0749		.0000	.424
PublicWrkShp*	.2731		.6250	.030
* Equal Variances Assumed				

Table 45 - Hierarchist vs. Fatalist *t*-Test

	Hierarchist		Fatalist	
Mechanism	**Mean**		**Mean**	**Sig.**
AdvisoryCmte*	.4533		.3750	.676
BoothatPub*	.3467		.2500	.588
Brochures*	.1600		.1250	.799
Charettes*	.2000		.2500	.743
FocusGrps*	.4267		.3750	.782
Games*	.0800		.1250	.668
SmallGrpBrief	.1467		.3750	.259
Interviews	.1733		.0000	**.000**
Kiosks*	.2267		.1250	.513
MultilingualTrans*	.1733		.2500	.597
Newsletters*	.2000		.2500	.743
GeneralNewspaper	.1467		.0000	**.001**
TargetedNewspaper*	.0533		.0000	.509
OpenHouse	.4000		.2500	.410
PressRelease	.2800		.1250	.280
PublicMeeting*	.5600		.6250	.728
RadioTVAds	.1467		.0000	**.001**
Simulation*	.1733		.2500	.597
SocioculturalEval*	.0133		.0000	.746
SpeakersBureau	.0800		.2500	.339
SpecialTranstoMtg	.0800		.2500	.339
InternetSurvey	.4933		.2500	.195
MailSurvey*	.0800		.0000	.412
PhoneSurvey*	.0667		.0000	.550
InPersonSurvey*	.1867		.3750	.214
TelephoneHotLines*	.0267		.0000	.645
TransportationFaire*	.0667		.1250	.550
Videos*	.2533		.1250	.426
Visioning*	.2000		.3750	.259
VisualPrefSurvey*	.0933		.1250	.776
GeneralWebSite	.4133		.2500	.371
ProjectSpecWebSite	.2800		.1250	.280
Flyers	.0933		.2500	.377
AudienceRespSyst*	.2400		.2500	.951
DraftDocShare*	.1333		.1250	.948
EmailNotices	.4533		.1250	**.038**
NewspaperFeatStory*	.1600		.1250	.799
OutreachtoPIOs	.1467		.0000	**.001**
FaceBookPage*	.4533		.5000	.804
TwitterAcct	.1733		.3750	.316
OtherSocMedia	.0400		.1250	.524
PostOthersWebPage*	.1333		.1250	.948
PostOthersFBPage	.0933		.0000	**.007**
PublicWrkShp*	.2133		.6250	**.011**
* Equal Variances Assumed				

Appendix I – Description of MPOs[8] and their comparison to other MPOs

MPO A was recognized in 1974. It is located in state Gamma and housed in a County Planning Department. It operates in a region with a population between than 400,000 and 450,000. It serves a geographic area between 800 and 1000 square miles. MPO B was officially designated as an MPO in 1968. It is organized as an independent entity, but is staffed by employees of the local council of governments (COG). It is located in state Beta and serves a region with a population between 4.5 and 5 million citizens. It is responsible for regional planning in a geographic area of between 3,000 and 3,500 square miles. The inclusion of MPO B in the group of interviewees was viewed as a corrective (though possibly mild) for the lack of larger than average organizations in Phase I of the pilot study. MPO C was organized in 1964 and serves a population between 250,000 – and 300,000 with a geographic area between 800 and 1000 square miles. MPO C is located in state Gamma and housed in a County Planning Department. MPO D is located in state Delta, and was established in 1992 and is organized as a regional planning district. It serves a geographic area of between 200 and 300 square miles and a population between 200,000 and 250,000 people.

To compensate for one of the weaknesses of the first phase of the pilot study, that it failed to take into account the operations of any large MPO in its analysis of the LRTP's public participation mechanisms and projects, interviews for phase II of the pilot study included a large MPO (serving a population of between 4.5 and 5.0 million persons). The median year for the founding of the MPOs included in the population of those serving 200,000 or more people, is 1974 (28 of the 202 MPOs in the study were founded in this year). This phase of the pilot study included

[8] The population of the MPO's service area is being reported as a range to help maintain the anonymity of the individuals who agreed to be interviewed for this research project.

speaking to staff from four MPOs, MPO A and MPO C were founded in 1964, MPO D in 1968 and MPO B in 1974. This means that the staff interviewed for phase II of the pilot study worked in MPOs that were slightly older than the average MPO in the nation.

Appendix J – Tests for Linearity of Logit

Table 46 - Linearity Tests for PART Model

LnParticipantLMH[a]		B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
.00	Intercept	-.649	5.357	.015	1	.904			
	ExternalRequire	-.242	1.865	.017	1	.897	.785	.020	30.369
	PecentWhite	-.025	.335	.005	1	.941	.976	.506	1.880
	[HierarchistBinary=.00]	.676	.988	.468	1	.494	1.966	.283	13.637
	[HierarchistBinary=1.00]	0[b]	.	.	0	.	.	.	.
	[EgalitarianBinary=.00]	.125	.956	.017	1	.896	1.134	.174	7.385
	[EgalitarianBinary=1.00]	0[b]	.	.	0	.	.	.	.
	[Sex_Binary=.00]	-.149	.284	.275	1	.600	.862	.494	1.502
	[Sex_Binary=1.00]	0[b]	.	.	0	.	.	.	.
	[GradDegreeYes=.00]	-.313	.304	1.058	1	.304	.732	.403	1.327
	[GradDegreeYes=1.00]	0[b]	.	.	0	.	.	.	.
	[IndividualistBinary=.00]	.224	.978	.052	1	.819	1.251	.184	8.498
	[IndividualistBinary=1.00]	0[b]	.	.	0	.	.	.	.
	PercentPubTrans	.111	.194	.325	1	.569	1.117	.764	1.634
	InternalMPOConsider	.907	2.053	.195	1	.659	2.478	.044	138.568
	PotentialConsequence	-.263	1.314	.040	1	.841	.769	.058	10.101
	PotentialConsequence * LnPotentialConsequence	.054	.690	.006	1	**.938**	1.056	.273	4.084
	InternalMPOConsider * LnInternalMPOConsider	-.256	.974	.069	1	**.793**	.774	.115	5.223
	PercentPubTrans * LnPercentPubTrans	-.019	.061	.093	1	**.760**	.982	.871	1.106
	PecentWhite * LnPercentWhite	.003	.064	.003	1	**.959**	1.003	.885	1.137
	ExternalRequire * LnExternalRequire	.006	.841	.000	1	**.994**	1.007	.194	5.235
.69	Intercept	-10.147	6.140	2.732	1	.098			
	ExternalRequire	-.927	2.028	.209	1	.648	.396	.007	21.079
	PecentWhite	.502	.384	1.707	1	.191	1.651	.778	3.504
	[HierarchistBinary=.00]	.263	.968	.074	1	.786	1.300	.195	8.669
	[HierarchistBinary=1.00]	0[b]	.	.	0	.	.	.	.
	[EgalitarianBinary=.00]	.100	.946	.011	1	.916	1.105	.173	7.062
	[EgalitarianBinary=1.00]	0[b]	.	.	0	.	.	.	.
	[Sex_Binary=.00]	.046	.273	.028	1	.866	1.047	.613	1.788
	[Sex_Binary=1.00]	0[b]	.	.	0	.	.	.	.
	[GradDegreeYes=.00]	.243	.284	.733	1	.392	1.275	.731	2.225
	[GradDegreeYes=1.00]	0[b]	.	.	0	.	.	.	.
	[IndividualistBinary=.00]	.132	.966	.019	1	.891	1.141	.172	7.580
	[IndividualistBinary=1.00]	0[b]	.	.	0	.	.	.	.
	PercentPubTrans	.011	.188	.004	1	.952	1.011	.700	1.461
	InternalMPOConsider	2.621	2.291	1.309	1	.253	13.755	.154	1227.217
	PotentialConsequence	.245	1.293	.036	1	.850	1.278	.101	16.109
	PotentialConsequence * LnPotentialConsequence	-.295	.681	.188	1	**.665**	.745	.196	2.827
	InternalMPOConsider * LnInternalMPOConsider	-1.024	1.074	.909	1	**.340**	.359	.044	2.947
	PercentPubTrans * LnPercentPubTrans	.018	.059	.096	1	**.756**	1.018	.908	1.143
	PecentWhite * LnPercentWhite	-.096	.073	1.717	1	**.190**	.909	.788	1.049
	ExternalRequire * LnExternalRequire	.436	.904	.233	1	**.629**	1.547	.263	9.100

a. The reference category is: 1.10.
b. This parameter is set to zero because it is redundant.

Table 47 - Linearity Tests for COMM Model

Log of Comm LMH[a]		B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
.00	Intercept	-5.417	5.308	1.042	1	.307			
	ExternalRequire	2.347	1.994	1.386	1	.239	10.456	.210	520.663
	PecentWhite	.008	.315	.001	1	.979	1.009	.544	1.869
	[HierarchistBinary=.00]	2.432	1.192	4.161	1	.041	11.385	1.100	117.843
	[HierarchistBinary=1.00]	0[b]	.	.	0	.	.	.	.
	[EgalitarianBinary=.00]	.790	1.152	.471	1	.493	2.204	.231	21.073
	[EgalitarianBinary=1.00]	0[b]	.	.	0	.	.	.	.
	[Sex_Binary=.00]	.205	.294	.483	1	.487	1.227	.689	2.185
	[Sex_Binary=1.00]	0[b]	.	.	0	.	.	.	.
	[GradDegreeYes=.00]	-.092	.313	.087	1	.769	.912	.494	1.683
	[GradDegreeYes=1.00]	0[b]	.	.	0	.	.	.	.
	[IndividualistBinary=.00]	1.651	1.167	2.000	1	.157	5.211	.529	51.344
	[IndividualistBinary=1.00]	0[b]	.	.	0	.	.	.	.
	PercentPubTrans	.237	.141	2.815	1	.093	1.268	.961	1.672
	InternalMPOConsider	-.529	2.117	.062	1	.803	.589	.009	37.394
	PotentialConsequence	-1.017	1.411	.519	1	.471	.362	.023	5.743
	PotentialConsequence * LnPotentialConsequence	.420	.745	.317	1	**.573**	1.521	.353	6.552
	InternalMPOConsider * LnInternalMPOConsider	.443	1.004	.194	1	**.659**	1.557	.218	11.143
	PercentPubTrans * LnPercentPubTrans	-.065	.038	2.924	1	**.087**	.937	.869	1.010
	PecentWhite * LnPercentWhite	-.003	.061	.003	1	**.954**	.997	.885	1.122
	ExternalRequire * LnExternalRequire	-1.106	.897	1.519	1	**.218**	.331	.057	1.921
.69	Intercept	-9.640	6.230	2.395	1	.122			
	ExternalRequire	.008	1.930	.000	1	.997	1.008	.023	44.286
	PecentWhite	.315	.375	.704	1	.402	1.370	.657	2.858
	[HierarchistBinary=.00]	1.048	1.190	.776	1	.378	2.853	.277	29.400
	[HierarchistBinary=1.00]	0[b]	.	.	0	.	.	.	.
	[EgalitarianBinary=.00]	.448	1.179	.145	1	.704	1.565	.155	15.771
	[EgalitarianBinary=1.00]	0[b]	.	.	0	.	.	.	.
	[Sex_Binary=.00]	-.037	.273	.018	1	.892	.964	.564	1.645
	[Sex_Binary=1.00]	0[b]	.	.	0	.	.	.	.
	[GradDegreeYes=.00]	.052	.282	.034	1	.854	1.053	.606	1.830
	[GradDegreeYes=1.00]	0[b]	.	.	0	.	.	.	.
	[IndividualistBinary=.00]	1.280	1.191	1.154	1	.283	3.596	.348	37.147
	[IndividualistBinary=1.00]	0[b]	.	.	0	.	.	.	.
	PercentPubTrans	.012	.126	.010	1	.921	1.013	.792	1.295
	InternalMPOConsider	3.326	2.267	2.152	1	.142	27.839	.327	2369.354
	PotentialConsequence	-1.392	1.279	1.185	1	.276	.249	.020	3.046
	PotentialConsequence * LnPotentialConsequence	.681	.671	1.031	1	**.310**	1.975	.531	7.352
	InternalMPOConsider * LnInternalMPOConsider	-1.424	1.064	1.792	1	**.181**	.241	.030	1.937
	PercentPubTrans * LnPercentPubTrans	-.006	.032	.034	1	**.854**	.994	.933	1.059
	PecentWhite * LnPercentWhite	-.060	.071	.697	1	**.404**	.942	.819	1.084
	ExternalRequire * LnExternalRequire	.028	.863	.001	1	**.974**	1.028	.189	5.585

a. The reference category is: 1.10.
b. This parameter is set to zero because it is redundant.

Table 48 - Linearity Test for PWR Model

Parameter Estimates

Log of PWR LMH[a]		B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
.00	Intercept	-11.881	7.630	2.424	1	.119			
	ExternalRequire	.909	2.013	.204	1	.652	2.482	.048	128.200
	PecentWhite	.581	.503	1.333	1	.248	1.787	.667	4.791
	[HierarchistBinary=.00]	2.131	1.183	3.248	1	.072	8.426	.830	85.566
	[HierarchistBinary=1.00]	0[b]	.	.	0	.	.	.	.
	[EgalitarianBinary=.00]	1.076	1.150	.875	1	.350	2.932	.308	27.924
	[EgalitarianBinary=1.00]	0[b]	.	.	0	.	.	.	.
	[Sex_Binary=.00]	.182	.285	.411	1	.522	1.200	.687	2.097
	[Sex_Binary=1.00]	0[b]	.	.	0	.	.	.	.
	[GradDegreeYes=.00]	-.214	.297	.516	1	.472	.808	.451	1.447
	[GradDegreeYes=1.00]	0[b]	.	.	0	.	.	.	.
	[IndividualistBinary=.00]	1.639	1.163	1.988	1	.159	5.152	.527	50.319
	[IndividualistBinary=1.00]	0[b]	.	.	0	.	.	.	.
	PercentPubTrans	.218	.131	2.784	1	.095	1.244	.963	1.607
	InternalMPOConsider	.739	2.093	.125	1	.724	2.094	.035	126.642
	PotentialConsequence	-1.987	1.324	2.252	1	.133	.137	.010	1.837
	PotentialConsequence * LnPotentialConsequence	.892	.694	1.649	1	**.199**	2.439	.625	9.514
	InternalMPOConsider * LnInternalMPOConsider	-.150	.991	.023	1	**.879**	.860	.123	6.005
	PercentPubTrans * LnPercentPubTrans	-.060	.034	3.200	1	**.074**	.941	.881	1.006
	PecentWhite * LnPercentWhite	-.111	.095	1.357	1	**.244**	.895	.743	1.079
	ExternalRequire * LnExternalRequire	-.424	.901	.221	1	**.638**	.655	.112	3.830
.69	Intercept	1.152	5.577	.043	1	.836			
	ExternalRequire	-2.803	2.036	1.895	1	.169	.061	.001	3.281
	PecentWhite	-.444	.341	1.693	1	.193	.641	.328	1.252
	[HierarchistBinary=.00]	.967	1.200	.649	1	.421	2.629	.250	27.624
	[HierarchistBinary=1.00]	0[b]	.	.	0	.	.	.	.
	[EgalitarianBinary=.00]	.771	1.186	.423	1	.515	2.162	.212	22.088
	[EgalitarianBinary=1.00]	0[b]	.	.	0	.	.	.	.
	[Sex_Binary=.00]	.130	.276	.223	1	.637	1.139	.663	1.956
	[Sex_Binary=1.00]	0[b]	.	.	0	.	.	.	.
	[GradDegreeYes=.00]	-.249	.287	.757	1	.384	.779	.444	1.366
	[GradDegreeYes=1.00]	0[b]	.	.	0	.	.	.	.
	[IndividualistBinary=.00]	1.666	1.204	1.914	1	.167	5.289	.500	56.003
	[IndividualistBinary=1.00]	0[b]	.	.	0	.	.	.	.
	PercentPubTrans	.266	.140	3.647	1	.056	1.305	.993	1.716
	InternalMPOConsider	4.497	2.424	3.442	1	.064	89.774	.776	10389.520
	PotentialConsequence	-.625	1.336	.219	1	.640	.535	.039	7.343
	PotentialConsequence * LnPotentialConsequence	.182	.702	.068	1	**.795**	1.200	.303	4.751
	InternalMPOConsider * LnInternalMPOConsider	-1.854	1.128	2.702	1	**.100**	.157	.017	1.429
	PercentPubTrans * LnPercentPubTrans	-.074	.038	3.764	1	**.052**	.929	.862	1.001
	PecentWhite * LnPercentWhite	.084	.065	1.650	1	**.199**	1.087	.957	1.236
	ExternalRequire * LnExternalRequire	1.237	.909	1.852	1	**.174**	3.444	.580	20.453

a. The reference category is: 1.10.
b. This parameter is set to zero because it is redundant.

Appendix K – Tests for Multicollinearity

Table 49 - Multicollinearity for PART Model

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.429	.207		2.069	.039		
	PercentPubTrans	-.002	.004	-.033	-.619	.536	.917	1.091
	PecentWhite	.002	.002	.047	.885	.377	.923	1.084
	InternalMPOConsider	-.055	.035	-.095	-1.585	.114	.741	1.349
	ExternalRequire	.041	.032	.075	1.277	.202	.772	1.296
	PotentialConsequence	.027	.027	.059	1.000	.318	.765	1.307

a. Dependent Variable: LnParticipantLMH

Table 50 - Multicollinearity for COMM Model

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.563	.203		2.779	.006		
	PercentPubTrans	-.001	.004	-.020	-.375	.708	.917	1.091
	PecentWhite	.002	.002	.045	.839	.402	.923	1.084
	InternalMPOConsider	-.078	.034	-.137	-2.303	.022	.741	1.349
	ExternalRequire	.019	.032	.036	.614	.539	.772	1.296
	PotentialConsequence	.047	.026	.104	1.779	.076	.765	1.307

a. Dependent Variable: Log of Comm LMH

Table 51 - Multicollinearity for PWR Model

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.660	.208		3.180	.002		
	PercentPubTrans	.001	.004	.010	.180	.857	.917	1.091
	PecentWhite	.000	.002	.009	.173	.863	.923	1.084
	InternalMPOConsider	-.070	.035	-.119	-1.996	.047	.741	1.349
	ExternalRequire	.003	.032	.005	.086	.932	.772	1.296
	PotentialConsequence	.060	.027	.130	2.210	.028	.765	1.307

a. Dependent Variable: Log of PWR LMH