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Organizational Structure and Institutional Support for USDA Forest Service Partnerships

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ORGANIZATIONAL STRUCTURE AND INSTITUTIONAL SUPPORT FOR USDA FOREST SERVICE PARTNERSHIPS

by

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In an era of constrained appropriations and increasingly complex social and environmental challenges, partnerships have become an essential tool for public land management agencies, such as the USDA Forest Service (USFS), to accomplish critical tasks, meet management goals, and enhance service delivery. Despite the growing practice and reliance on partnerships as an alternative management strategy, few empirical assessments of this management approach have been conducted, and knowledge is limited regarding the structure and function of these relationships. Therefore, the goals of this study were to expand the established partnership knowledge base by systematically examining the institutional characteristics necessary to foster a vibrant partnership culture, uncovering and documenting the various partnership structural types being utilized, and determining whether or not institutional characteristics or external environment characteristics are related to the partnership approach utilized by USFS personnel.

To explore these partnership characteristics, and assess whether differences existed between administrative levels and between national forest, an online questionnaire was administered to agency personnel on 13 randomly selected forests during the fall of 2011. Forests were randomly selected from three stratum of internal commitment from all 155 national forests' "Working Together" webpage. Of the 1584 respondent sample, 611 completed the questionnaire (40% response rate).

Data collected clearly document a steady increase in the reliance of partnerships as a management strategy in recreation and resource service delivery. While the findings reveal diverse partnership support networks, respondents reported few incentives to cultivate partnerships and limited recognition for their partnership work. Furthermore, this study confirms that agency personnel work with multiple types of volunteer or partnering groups on a fairly regular basis, and make strategic choices when selecting and cultivating partnerships based on the types of work typically performed and their access and proximity to different partnering groups. Moreover, a mixed-method cluster analysis provided further insight into agency-partner interactions by identifying and defining partnership structural types and exposing variation in personnel's capacity to engage partners based on the level of internal support received, the extent of the national forest's partnership dependency, and type of external environment that categorizes the communities adjacent to the national forest (i.e., urban or rural). As the partnership phenomenon continues to be espoused by the USFS as an innovative and alternative management strategy, this thesis provides agency personnels' depiction of the agency's capacity to engage and support partnerships at multiple administrative levels and on different national forests, and helps build the foundation for managing national forests through partnerships.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

FIGURE PAGE

CHAPTER 1 - INTRODUCTION

The partnership phenomenon has gained considerable momentum among natural resource agencies as an innovative and alternative management strategy in an era of constrained appropriations. This entrepreneurial outgrowth stemmed from efforts in the 1980s and early 1990s to reduce the federal budget deficit by downsizing the federal government and placing more emphasis on public-private partnerships (English & Skellern, 2005). As with other land management agencies, the USDA Forest Service (USFS) is beset with a myriad of challenges including a burgeoning demand by Americans for outdoor recreation opportunities, an increased trend in intense wildfires, the influx and spread of invasive species, and an estimated $342 million in deferred or backlogged maintenance (USDA Forest Service, 2012). As a result, USFS agency personnel are increasingly dependent upon partnerships to meet agency goals and objectives and provide adequate public services (Absher, 2009; Seekamp & Cerveny, 2010). In order to fulfill the mission envisioned by the USFS, partnerships have become an essential tool for recreation and other resource managers.

Partnerships have gained a ubiquitous presence in past and present recreation and resource service delivery. The USFS Partnership Guide defines partnerships as the "…people, organizations, agencies, and communities that work together and share interests" (National Forest Foundation, 2005, p.5). Partnerships can include, but are not limited to, individual volunteers, service groups, professional contractors, commercial outfitters and other government agencies. Due to the diverse nature of partnerships, these relationships supplement USFS workforces by offering alternative and resourceful management strategies, enhancing program capacity and allowing otherwise neglected services to be maintained through an expanded workforce (McCreary, Seekamp, & Cerveny, 2012).

Mowen and Kerstetter (2006) highlight the growth and frequency of partnerships as an operational framework for agency personnel. Partnerships have emerged as "both an ideology and prescriptive tool" for public land managers to deal with increasingly complex problems by promoting a sense of shared ownership and responsibility across diverse environments and resource issues" (Selin, Shuett, & Carr, 2000, p. 735). In essence, partnerships can provide the provisional "boundary-spanning mechanisms that foster an integration of disparate interests, values, and bodies of information while promoting trust and building relationships" (Wondolleck & Yaffe, 2000, p. 7). However, despite the pervasiveness of the shift toward partnerships as a management strategy, there is a general lack of understanding regarding the nature and structure of these relationships (Mowen & Kerstetter, 2006).

While a wealth of information has been compiled over the last decade by prominent researchers, very few studies have encompassed the full breadth of an operational partnership framework for managers (Seekamp & Cerveny, 2010). Despite the growing partnership literature, few empirical assessments exist that "attempt to sift through the inflated rhetoric" to enhance the overall effectiveness and capacity of partnerships to effectively manage natural resources (Selin, 1999, p. 260). Numerous case studies and partnership-specific research have identified the benefits and challenges of partnerships, characteristics of successful partnerships, and collaborative planning methods (Absher, 2009; Andereck, 1997; James, 1999; Selin & Chavez, 1995; Seekamp & Cerveney, 2010; Uhlik & Parr, 2005). However, partnership benefits, successes, and planning methods were broadly defined, and subjective to the environment in which the studies took place (Mowen & Kerstetter, 2006). Thus, the generalizability of previous research may be limited due to the wide breadth of historical, political, and social environments in which these interactions take place (Crompton, 1999).

Despite the limitations of previous research, the continued growth and reliance on partnerships by public land management agencies, such as the USDA Forest Service, warrants a systematic examination of this emerging management approach. The call for such a study is further supported by the need to enhance efficient and productive use of partnerships by public land management agencies given the limited financial and human capital available to recreation and resource managers. Therefore, the research presented in this thesis may enhance the efficiency with which the USFS enters into these relationships by exposing the institutional characteristics necessary to promote effective partnerships, as well as document and uncover various partnership structures being utilized within the agency.

This research presents data from the third stage of a multi-phase study on USFS partnerships. While recreation use provided the exclusive context for previous stages of this study, results from Phase I and II revealed partnerships permeating most, if not all, USFS program areas. As such, although the foundational research was recreation specific—and thus the frame of the literature reviewed—the scope of this study is broader with results being relevant to all USFS personnel utilizing partnerships in all program areas.

1.1 Research Objectives

The goal of this research was to better understand the different structural formations of partnerships by exploring different levels of partnership reliance and administrative support for partnerships. Specifically, the research objectives of this study include:

1. Explore agency personnel's internal support network for USFS partnerships and assess if differences exist between administrative levels (i.e., ranger district, forest zone or areas, forest supervisor's office, multiple administrative units) and between national forests.

2. Explore the perceived level of administrative reliance for USFS partnerships and assess if differences exist between administrative levels and between national forests.
3. Reveal the types of institutional support or recognition agency personnel are receiving for their work with partnerships and assess if any differences exist between administrative levels and between national forests.
4. Evaluate the different partner that are utilized by the USFS and determine if any differences exist between administrative levels and between national forests.
5. Identify and define partnership structural types based on partnership approach, access, and capacity, and determine if the institutional support characteristics and external environment characteristics are related to the partnership structure being utilized.

1.2 Thesis Overview

This thesis presents data from a survey of USFS personnel. Personnel from 13 national forests participated in this empirical study. Due to sampling error (i.e., staff at some ranger districts on one national forest were not included in the sample and one national forest having too few respondents for adequate power in the statistical analyses), comparisons between national forests are restricted to the data from 11 national forests. However, comparisons between administrative levels will include responses from all 13 national forests. Again, the purpose of this study was to explore the institutional characteristics necessary to foster a vibrant partnership culture, as well as uncover and document various partnership structures being utilized within the agency. Therefore, a decision was made to use different sample sizes to maximize power within analyses when appropriate.

This thesis is organized into five additional chapters. Chapter Two presents a detailed literature review in which the partnership phenomenon within the USFS will be thoroughly

explored. Following the literature review, Chapter Three provides a detailed description of the study population and research methodology. Chapter Four presents the results followed by a discussion in Chapter Five. The final chapter (Chapter Six) provides concluding remarks, presents challenges or limitations, and highlights any implications of the results.

CHAPTER 2 – LITERATURE REVIEW

As managers on national forests continue to provide opportunities to the visiting public and manage natural resources, partnerships will continue to revolutionize the way in which services are delivered. The goals of this review are to: (1) discuss the overall structure and management directives of the USFS; (2) describe the role of partnerships within the USFS; (3) define partnerships; (4) explore the increasing trend of partnership utilization; (5) identify challenges and constraints of working with partners; (6) identify key structural characteristics of partnership approaches; and, (7) discuss the institutional characteristics and support necessary to foster successful partnerships.

2.1 Organizational Structure & Management Directive of the USFS

The USFS, which is part of the U.S. Department of Agriculture (USDA), was established in 1905 and—encompassing 193 million acres of public land—serves as the primary forestry agency within the United States (US Forest Service, n.d.). While initially established to secure water and timber resources for the Nation's benefit, the mission has since expanded to "sustain the health, diversity, and productivity of the Nation's forests and grasslands to meet the needs of present and future generations" (US Forest Service, n.d.). There are four administrative levels of national forest offices including: (1) the national (or Washington) office; (2) regional offices; (3) national forests; and, (4) ranger districts (US Forest Service, n.d.). The management directive and national policy procedures originate from the agency's headquarters in Washington, DC, and is overseen by the Chief of the USFS who reports to the Under Secretary for Natural Resources and Environment in the USDA.

The USFS is organized into 9 regions—numbered 1 through 10 (Region 7 was eliminated when it was consolidated into Regions 8 and 9 in 1965; Figure 1)—each of which encompass

broad geographic areas and are headed by a regional forester who reports directly to the Chief. There are 155 national forests and each national forest is composed of multiple ranger districts that report to the forest supervisor. Ranger districts can vary considerably in size, and some ranger districts are housed within the forest supervisor's office due to recent consolidation of some national forests or ranger districts within some national forests.

In order to achieve the mission envisioned by the USFS, management of all national forests is guided by a "multiple use management concept" that specifically directs the use of five land uses: outdoor recreation, range, timber, watershed, and wildlife and fish purposes (US Forest Service, n.d.). In accordance with the National Forest Management Act (NFMA) of 1976, each national forest follows the directive of a National Forest System land management planning rule (i.e., planning rule), that directs all natural resource management activities on national forests (West Law School, 2011). Administratively, the USFS appears to be highly centralized, with management directives and planning rules emanating from the Chief. However, these directives and rules are broad, leaving national forests a modest level of autonomy in interpreting and implementing the rules and directives. Furthermore, district rangers maintain significant discretion of on-the-ground forest management decisions and day-to-day forest operations. Thus, work is typically carried out through a decentralized organization of ranger districts.

In April of 2012, the USFS adopted a new planning rule that "sets forth process and content requirements to guide the development, amendment, and revision of land management plans" (National Forest System Land Management Planning, 2012, p. 21162). The new planning rule provides an integrative framework that allows the agency to adapt to changing conditions and improve resource management by providing a process for planning that is science-based and adaptive. In addition, the new planning rule specifically emphasizes providing a "transparent,

collaborative process" that emphasizes opportunities for effective public participation and embraces partnerships for locally-driven and landscape-scale conservation (National Forest System Land Management Planning, 2012, p. 21164). This provides a platform for the agency to proactively involve the public and other land management agencies throughout the planning process, as well during the implementation of individual plans. Thus, the new planning rule emphasizes collaborative efforts with local and regional partners to achieve successful forest management.

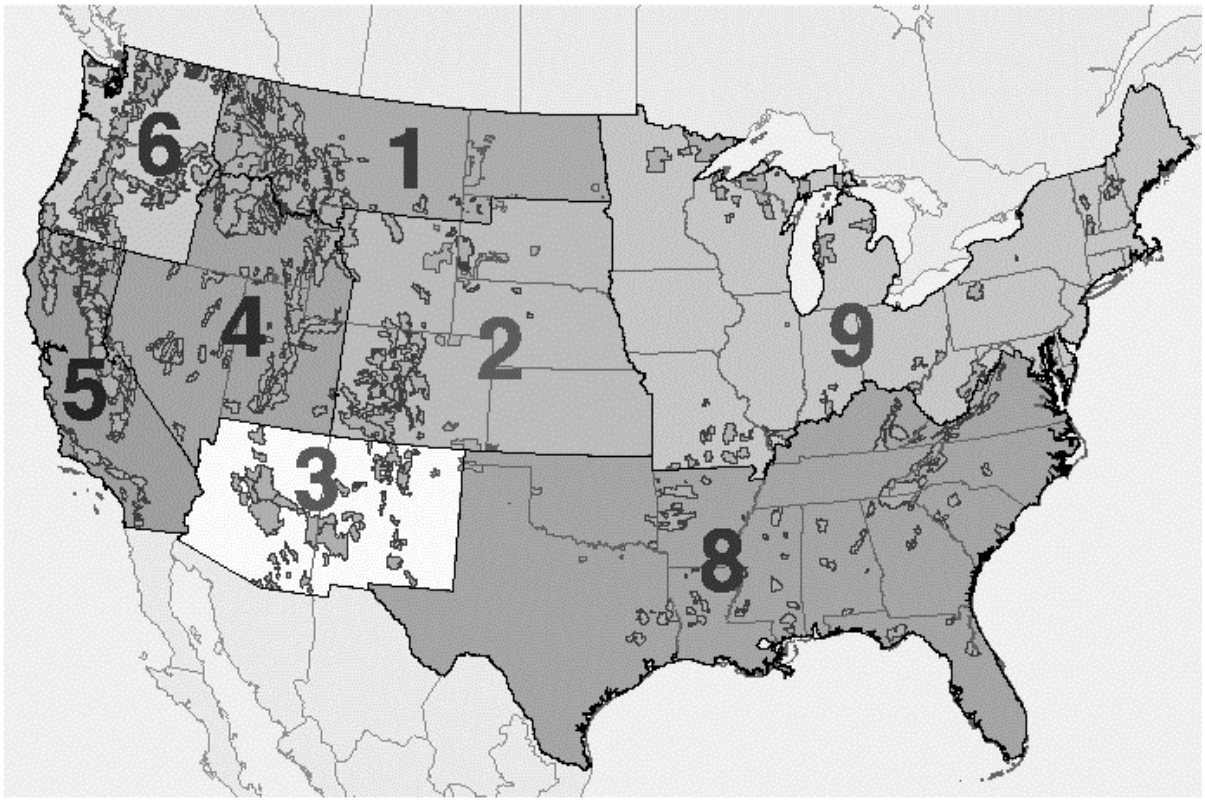

Figure 1: USFS Regions; Source: http://fsgeodata.fs.fed.us/rastergateway/states-regions/regions.php

2.2 Partnerships within the USFS

Historically, recreation partnerships have been a long-standing tradition in the USFS. The USFS Partnership Guide (NFF, 2005) cites that the agency has worked with partnerships and in collaborations to achieve managerial goals and objectives since its inception in 1905. Early

agency partnerships were developed from "grassroots responses to pressing management problems" (Selin & Chavez, 1993, p. 2). Although the USFS has expanded its partnership base during the last century, only now under the current political culture of fiscal constraints and "doing more with less" are we seeing a rapid insurgence of interest in partnering among recreation service providers (Weddell, Wright & Backman, 2007, p. 169). While interest continues to grow for recreation partnerships, current management systems and organizational frameworks (i.e., resources, incentives, and administrative structure) have lagged behind in sufficiently developing and incorporating them into national forest administration (McCreary, 2010; Seekamp & Cerveny, 2010; Selin & Chavez, 1993).

Despite visitation to our national forests remaining steady, with 178 million visits in 2007 (USDA Forest Service, 2010), recreational facilities are falling short of our nation's demands (Collins & Brown, 2007). Social and economic constraints have led recreational managers to "examine privatization and shared responsibility" as a means of stretching limited fiscal resources in order to meet recreational demands and provide services (Selin & Chavez, 1993, p. 2). Similarly, mounting institutional mistrust has left many Americans with feelings of doubt and helplessness leading to a decline in civic awareness, participation, and involvement (Wondolleck & Yaffe, 2000). However, partnerships can help provide transparency within the USFS by increasing opportunities for public and private enterprises to become involved in agency activities, provide a forum in which diverse values can be discussed, and foster a sense of shared responsibility and civic pride within the community (Wade, 2005; Wondolleck & Yaffe, 2000).

Partnering efforts are therefore proliferating as a management tactic in an era of fiscal constraint and public distrust. The USFS's Partnership Resource Center's website[1] provides the following reasons for establishing partnerships: broadening mutual benefits and supporting mission activities; connecting managers to other government/public programs to maximize effectiveness; conserving public lands and resources; establishing links among the agency and stakeholders; facilitate an understanding of the USFS mission, mandates, and goals; facilitating cross-boundary solutions to broad conservation challenges; and, helping the agency meet its mission. In essence, partnerships can provide the provisional "boundary-spanning mechanisms that foster an integration of disparate interests, values, and bodies of information while promoting trust and building relationship" (Wondolleck & Yaffe, 2000, p. 7).

2.3 Defining Partnerships

Partnerships and collaborative efforts have received considerable attention as an alternative approach to natural resource management. However, difficulties have arisen in connecting this growing body of theoretical literature in a way that will reveal meaningful context and "general wisdom or theory…from each individual case" (Uhlik & Parr, 2005, p. 2). Further, Uhlik and Parr (2005) state that "partnership has different meaning for different people" and failure to realize this "lack of shared meaning can doom a partnership before it has begun" (p. 3). The term is frequently associated and used in a variety of ways by various administrative leaders; such gaps in context can lead to confusion in defining relationships and evaluating impacts of the collaborative process itself (Cousens, Barnes, Stevens, Mallen, & Bradish, 2006). Similarly,

[1]Found under Highlights tab at http://www.fs.usda.gov/main/prc/home

> "partnerships can vary depending on the type of contract (e.g., mutual benefit agreements, federal financial assistance, contracts, interagency agreements, memorandums of understanding, cooperative research and development agreements, volunteer agreements, collection agreements, and cost reimbursement agreements) and the type of involvement (e.g., networking, coordination, cooperation, endorsement, sponsorship, and collaboration" (Seekamp & Cerveny, 2010, p.4).

Simply stated, while partnerships may seem like an all encompassing panacea to management concerns, gaps exist in partnership terminology and information is lacking regarding institutional characteristics necessary to facilitate and foster partnership activities (Mowen & Kerstetter, 2006).

Distinction between partnerships and collaborations need to be addressed within the context of this study. The primary difference is that collaborative efforts "may lack a full understanding of the issues that generate the alliance" (James, 1999, p. 38) and that formulation of needs are "in response to external pressures with evolving efforts that change with agenda shifts" (Seekamp & Cerveny, 2010, p. 4). Essentially, agency collaborations are a product of process, where goals and agency vision are continually evolving and are more likely to adhere to an informal structure (Waddock, 1991). In contrast, numerous researchers have cited that clear goals and objectives need to be established from the onset of a partnership arrangement (Andereck, 1997; Lasker, Weiss, & Miller, 2001; James, 1999; Seekamp & Cerveny, 2010; Selin & Chavez, 1994). Within a partnership, needs are "formulated internally to address specific objectives" and are "identifiable and readily understood" by participating parties (Seekamp & Cerveny, 2010, p. 4). That's not to say partnerships are restricted to the rigors of a highly structured agreement. Selin and Chavez (1994) state "partnerships range from situations where

two agencies interact briefly around a common problem to those where multiple organizations are represented in an ongoing venture" (p. 52). Seekamp and Cerveny (2010) further surmise that "partnerships have a mixture of product and process as outcomes, which arise from internal and external pressures to formulate proactive objectives" (p. 4). While this study focuses on product-as-outcome partnerships, recognition of the interdependency of collaborative goals within partnerships is necessary and, thus, incorporated into the partnership definition.

Throughout the literature, partnerships have continually been defined by voluntary cooperation and co-production between two or more parties that involves the pooling of resources (e.g., labor, money, information) and the attainment of mutually agreed-upon objectives (Andereck, 1997; Gray, 1985; McCreary, 2010; Seekamp & Cerveny, 2010; Selin & Chavez, 1993; Uhlik & Parr, 2005; Wondolleck & Yaffee, 2000). Partnerships have "numerous potential benefits including stretching scarce public resources, encouraging public participation…enhancing the credibility of the agency within the community and providing organizational flexibility" (Selin & Chavez, 1994, p.52). Therefore, it has been documented that the ultimate goal of a partnership is to develop a "collaborative advantage" and increase a synergistic response between participants (Andereck, 1997, p 46).

Lasker et al. (2001) further elaborate on this "collaborative advantage" by identifying "synergy as the proximal outcome of partnership functioning that gives collaboration its unique advantage" (p. 183). Synergy can be defined as the ability of an organization to accomplish more through conjunction with others than individual partners could meet on their own (Andereck, 1997; Lasker et. al. 2001; Seekamp & Cerveny, 2010; Weiss, Anderson & Lasker, 2002). This potential for collective action has been identified as "one of the most valued aspects of partnership synergy" (Lasker et. al. 2001, p.185). With the increasingly diverse management

issues regarding recreational services, partnering allows public land management agencies "to not only find the financial, human, and capital resources to sustain services" (Mowen & Kerstetter, 2006, p. 2) but also reestablish (or reassess) the social concerns of the broader community for whom services are provided (Lasker et al. 2001).

While building an agency's capacity to deliver recreational services and complete project tasks is a central facet of these relationships, synergy may not necessarily be the desired outcome of successful agency partnerships (Seekamp & Cerveny, 2010; Seekamp, Cerveny, & McCreary, 2011). As a public service provider, the USFS may enter into partnerships as a means of engaging and meeting public demands (i.e., in some cases, partnerships are utilized in order to provide services to the public, such as an educational group to enhance public stewardship) rather than acquiring the services provided by that group (Seekamp & Cerveny, 2010). As partnerships can be seen as a spectrum of relationships, the definition of partnerships within this project needs to encompass the full extent of these relationships. Therefore, partnerships will be defined in the broadest of terms as relationships between people, organizations, agencies, and communities (e.g., volunteers, interagency collaborations, contractors, AmeriCorps and Student Conservation Association interns, outfitters and guides, tribal governments, non-profit organizations, foundations, power companies, etc.) that work together and share interests.

2.4 The Growing Trend of Partnerships

While difficulties exist in establishing a "single source or reason for the growth in partnerships," one potentially significant link could be building social interest in natural resource management and the role that this shift has played in initiating and supporting partnership efforts (Coughlin, Hoben, Manskopf & Quesada, 1999, pp. 1-2). Within the United States, national forests are managed under a centralized government and are thus correspondently dependent on

the capricious nature of public policy and uncertain budgets (Bray & Valezquez, 2009). The nature of both public and private organizations' problems are now at such a state that they exceed "the capacity of any single firm to control" (Gray, 1985, p. 913). Mowen and Kerstetter (2006) highlight two emerging forces that necessitate the utilization of partnerships in management practices which include: (1) diminishing public resources combined with an increase in recreation demand, and (2) pressing social concern for overall public welfare (e.g., environmental degradation, air and water quality, and physical and mental well-being). Thus recreation providers, such as the USFS, have the opportunity to reposition itself beyond a purely "transactional provision of recreation goods and services" to encompass a broader social mission and goal while still supporting the agency's overall mission (Mowen & Kerstetter, 2006, p. 2). Collaborative efforts, therefore, offer an opportunity to involve the public in a meaningful way, creating and building a sense of shared ownership and responsibility toward natural resource management by moderating and limiting the top-down style of government agencies while integrating the participation of local communities (Lasker & Weiss, 2003; Wondolleck & Yaffee, 2000).

Yet, most observers of partnership efforts recognize the central role government plays in providing the structural framework and unique access to knowledge and resources necessary to successful collaborative efforts (Bray & Valezquez, 2009; Mowen & Kerstetter, 2006). Wondolleck & Yaffee (2000) further elaborate that collaborations and partnerships "build bridges" between government agencies, communities, and private groups that enables both the agency and partnering groups to then develop creative strategies for regional and national natural resource conservation (p. 3). Successful partnerships are, therefore, built on developing and maintaining relationships between groups, and establishing a basis of common meaning between

organizations (Gray, 1985; Lasker et al., 2001; Mowen & Kerstetter, 2006; Seekamp & Cerveny, 2010; Yaffe & Wondolleck, 2000). Indeed, regulatory processes for natural resource management, such as the National Environmental Policy Act (NEPA) or the National Forest Management Act (NFMA), are making paramount effort to involve the public in a more meaningful context, promoting the expansion of services offered and fostering a greater sense of civic engagement (Steelman & Ascher, 1997).

While collaboration and partnership efforts are not necessarily the goal of natural resource management, it can play an essential role in responding to the growing societal and environmental needs discussed above. Wondolleck & Yaffe (2000) outline four major benefits of the collaborative approach in resource management:

- building understanding by fostering exchange of information and ideas among agencies, organizations, and the public and providing a mechanism for resolving uncertainty;
- providing a mechanism for effective decision making through processes that focus on common problems and build support for decisions;
- generating a means of getting necessary work done by coordinating cross-boundary activities, fostering joint management activities, and mobilizing an expanded set of resources; and
- developing the capacity of agencies, organizations, and communities to deal with the challenges of the future (p. 18-19).

Thus, partnerships have the innate capability to go beyond top-down or single-solution approaches by embracing innovative strategic management designs that enable various collaborative efforts to supplement one another, capitalizing on their complementary strengths and effectively achieving more with less (Lasker et al., 2001; Lasker & Weiss, 2003; Selin,

1999). It only makes sense then for management agencies to utilize partnerships as an effective means to increase democratic public involvement, build a sense of community pride, and enhance both the quantity and quality of services offered. However, partnerships are not necessarily a management panacea, as many limitations and constraints exist.

2.5 Partnership Limitations & Constraints

As pointed out by Lasker et al. (2001), potential concerns exist when carrying out and following through with partnering efforts. Not only do relationships need to be built and maintained (e.g., trust and respect), partnership characteristics (e.g., leadership, administration and management, governance, and efficiency) need to be in sync (Seekamp & Cerveny, 2010). Furthermore, agency personnel need to fully "understand and appreciate partners' different perspectives" to achieve synergy within partnerships (Lasker et al., 2001, p. 193). Partnership efforts can involve difficult issues and decisions that require collaboration between various organizations with divergent objectives and concerns (Mackintosh, 1992). In some areas, few or no opportunities may exist for organizations to partner, or the incentives to partner are not great enough to facilitate the effort required to initiate and maintain successful partnerships (Wondolleck & Yaffee, 2000).

These criticisms stem directly from the inherent difficulty of developing and maintaining strong working relationships between organizations entered into a partnership (Lasker et al. 2001, Lasker & Weiss, 2003). Building these relationships is "time consuming, resource intensive and very difficult," with no guarantee to the involved parties that the partnership's goals or objectives will be met (Weiss et al., 2002, p. 684). Observed drawbacks in the literature also highlight some of the difficulties that exist in creating a generalized mission "because the breadth of personalities, local conditions, enabling laws, and community values can vary

considerably" among involved partners (Mowen & Kerstetter, 2006, p. 4). Similarly, "turf issues" may become an issue whereby "partnering agencies feel threatened when other organizations conduct activities" that encroach upon their traditional services and, thus, feelings of mistrust and underrepresentation emerge that counter partnership efforts (Mowen & Kerstetter, 2006, pp. 3-4).

Results from a survey of USFS staff employees uncovered several barriers or concerns to partnerships relating to the agency's capacity to manage relationships, including: "monitoring, oversight, training volunteers, resources to support, agreements, paperwork, special training, performance reporting, high turnover, poor work, unreliability, absenteeism, and confidentiality issues" (Absher, 2009, p. 113). Similarly, Lasker et al. (2001) highlighted drawbacks related to partnering groups, including:

> "diversion of time and resources from their other priorities and obligations; reduced independence in making decisions about their own activities; a loss of competitive advantage in obtaining funding or providing services; conflict between their own work and the partners work; and insufficient credit for their contributions to the partnership"(p. 191).

These barriers, as well as various external and internal components, typify the inherent obstacles of partnership formation and maintenance. While some of these challenges are easy to deal with, others are intrinsically difficult and require agency personnel to build rapport and overcome barriers.

Weiss et al. (2002) describe that these types of problems are generally not well anticipated by organizations and that often collaborative processes break down. Compounding these challenges is the reality that building a trusting relationship within which goals and

objectives can be realized takes significant time and effort. McCreary (2010) cites that "because the public, including partners, are long term customers or patrons of the USFS, it is necessary to build a relationship that endures long term modifications and challenges" (p. 15). Thus, attitudes and perceptions held by the various groups involved need to be taken into account frequently and at every stage in the partnership process (Lasker et al, 2001; Wondolleck & Yaffe, 2000). It is only by combining this broad range of social, economic and environmental knowledge, skills, and resources can members participating in the partnership process "understand the underlying nature of such problems" and effectively develop locally feasible solutions to address them (Lasker & Weiss, 2003, p. 123).

2.6 Partnership Typology & Structure

In theoretical and conceptual terms, the strategies and tactics of natural resource management within the USFS have undergone a fairly dramatic shift over the last decade from a highly centralized approach to a more democratic decentralized approach (Carlsson & Berkes, 2005; Lane, 2001; Lasker & Weiss, 2003, Wondolleck & Yaffe, 2000). Seekamp et al. (2011) document that the expanding involvement of partnerships in natural resource management has begun to transform the way in which personnel perceive and utilize these relationships from the traditional hierarchical approach to a more flexible interorganizational structure. This structural evolution is congruent with the call for local participation in natural resource and recreation management; that is, there is a cross-sector initiative to involve representatives from industry, state and local governments, citizens, interest groups, and other volunteer sectors to engage in the partnership processes (Moore & Koontz; 2003; Selin, 1999). With such increasingly complex social demands involving various and sometimes conflicting interests, successful partnerships

now necessitate the utilization of effective and appropriate organizational structures that can continue beyond initial efforts and endure over time.

However, very little literature exists within natural resource management on defining the categories of the variety of inter-and intra-organizational relationships. Given the wide range and diversity of partnership efforts, it is difficult to understand the various classifications and approaches involved (Coughlin, Hoben, Manskopf, & Quesada, 1999). Seekamp et al. (2011) document that the way in which personnel perceive and characterize partnerships varies "based on the type of structure…and the type of involvement" (p. 616). Indeed, many times the lines are blurred between the variety of partner groups and relationships, and difficulties exist in defining them by any one name. Further, Coughlin et al. (1999) highlight six organizations that can initiate a partnership: local citizens, community groups, non-profits, local government, industry, and government agencies. Although not an exhaustive list, these groups illustrate that partnerships range in structure and function, from informally organized groups to highly structured organizations with various degrees of power and resources (Coughlin et al., 1999).

Scale, in various aspects (geographic, locus of control, legal authority, organizational diversity and size, and temporal) can also shape group dynamics and the framing of an issue (Margerum, 2008; Selin, 1999). Geographic scale and locus of control are common dimensions found throughout the literature when assessing partnership typologies. Geographic scale (i.e., at the community, state, regional, or national level) and external environment (i.e., proximity to rural, urban, or amenity communities) give insight into the type of partnerships a forest unit utilizes, as well as information regarding its access to potential partners (McCreary, 2010; Selin, 1999). Perceived control or scope of involvement and power reveal various aspects of partnership structure including level of participation and ownership, as well as affect the

interactions among and between the agency and its various partners (Gray, 1989; Selin, 1999; Seekamp et al., 2011). Related to USFS partnerships, understanding and identifying the various power relations becomes relevant as decision-making and goal-setting primarily "reflect the norms of the federal agency involved" (Seekamp et al., 2011, p. 617). Additionally, Seekamp et al. (2011) revealed not only are personnel engaged in a wide variety of partner types but they also make "cognitive choices about the partners they recruit, the projects they prioritize, and the relationships they cultivate" (p. 628).

Partnership structures, thus, can be composed of a wide variety of groups associated to one another in complex networks. Consequently, understanding how agency personnel perceive the diverse and various structures will play a substantial role in revealing with whom and to what extent the agency enters into partnering relationships. The purpose here then is not to be exhaustive in describing typologies but to identify several preliminary relationships by which partnerships can be classified. With such a variety and range of potential alliances, typologies become useful building blocks of theory by aiding in the identification of various groups and differentiating among the diverse functions each serves (Margerum, 2008; Moore & Koontz, 2003).

When considering the partnering organization types described above by Coughlin (1999), researchers have subsequently condensed this list into a conceptual spectrum with primarily "folk managed" (Carlsson & Berkes, 2005, p. 66) or "grassroots partnerships" (Selin, 1999, p. 264) on one end and "legally mandated, authorized, or compelled" (Selin, 1999, p. 264) or "government driven" approaches (Moore & Koontz, 2003, p. 453) on the other end. Moore & Koontz (2008) suggest three groups that are: citizen-driven, government-directed, and a hybrid of the two. Margerum (2008) recognizes that "this type of member-based definition highlights

some important distinctions," but states that such classifications do not fully characterize and differentiate between the various collaborative groups that exist (p. 488). For example, Seekamp et al. (2011) characterize a similar relationship along a continuum of the "essential character or constitution" of USFS partners in which "state agencies, federal agencies, local governments, political leaders, and other Forest Service units" are representative of one end and "trail associations, local recreation groups, education groups, and university groups" the other (p. 622). Specifically, this dimensional view splits partner types between governmental partners with shared power and service-oriented partners with specific work projects in mind that may or may not meet the specific task-related goals of the agency (Seekamp et al., 2011). However, Seekamp et al. (2011) illustrate that a one-dimensional approach to classify partner types is insufficient and that multiple dimensions—in particular, categorizing partners on a continuum of the nature and extent (i.e., essential and long-term collaborators to fleeting or one-time partners who may not contribute to mission-critical work) and on a continuum of the motivations driving a partnering organization (i.e., financial-driven partners to intrinsically-motivated partners)—exist, demonstrating the complexity of partnership arrangements.

While in a co-management context, Carlsson & Berkes (2005) illustrate four classifications based on interorganizational dependence that mimic findings of overall partnership structure: (1) as an exchange system; (2) as a joint organization; (3) as a state nested system; and, (4) as a community nested system. The National Forest Foundation (2005) similarly classifies these relationships as mutual benefit agreements (e.g., participating agreements and joint venture agreements), federal financial assistance (e.g., cooperative agreement and grants), contracts (e.g., stewardship contract and simplified acquisition), and other agreements

(memorandum of understanding, cooperative research and development agreements and volunteer contracts).

Management of these relationships as an exchange system can be described as "some kind of relation between separate spheres of dominance fraternizing with each other" that tends to be informal and lack any binding agreement (Carlsson & Berkes, 2005, p. 68). Included within this broad category includes the exchange of information, goods, and services. When coordinating a plan between the agency and other parties in which there are no resources exchanged, agency personnel will enter into a memorandum of understanding to formally document the interaction (National Forest Foundation, 2005).

Management as joint organizations, otherwise referred to as mutually beneficial agreements, is viewed as having intercepting or overlapping sectors. Each sector remains autonomous from the other, yet may form "joint management bodies or cooperative units" in which they may engage in joint decision making processes (Carlsson & Berkes, 2005, p. 68). Partnership agreements include an exchange or expenditures of services, funds, or resources in which there is a mutual benefit to both the agency, and the partnering organization (National Forest Foundation, 2005). This relationship also typifies the "hybrid model" (Moore & Koontz, 2003, p. 454) in which a "formalized arena for cooperation" between community-led and state-led initiatives may be carried out (Carlsson & Berkes, 2005, p. 68). McCreary (2010) defines a similar partnership structure as a strategic alliance between organizations in which forests work with those partners providing the most efficient relationship and thus the greatest benefit. Such alliances are being increasingly utilized as they optimize the USFS potential in recreation service delivery by pooling knowledge and resources that may not have otherwise been available (McCreary, 2010).

The final two relationships can be labeled as "nested" in that either the primary authority lies with the state (or government) or is citizen directed. Both nested management structures may be entered into for federal financial assistance (i.e., the agency encourages or supports the activities of nongovernmental organization) or contracts (i.e., the intention is to acquire goods and services for the direct benefit of the USFS; National Forest Foundation, 2005). Management of these relationships as a state nested system is when the regulating authorities are the "de facto holder of all legal rights" within an area or resource system but entrust private actors with "the right to manage or appropriate resources" upon that land (Barlsson & Berkes, 2005, p. 68). This term is similarly described by Margerum (2008) as "organizational" or a government-directed initiative in which nongovernment organizations, citizens groups, and local governments may also be included (p. 489).

Finally, management as a community-nested system can be defined similarly to the previous system but reversed in structure. Here, authority lies in community or public organizations (e.g., NGOs, Nature Conservancy, and AmeriCorps), wherein the regulating authorities operate "within the realm of 'non-public' sphere" and resources users direct management strategies (Carlsson & Berkes, 2005, p. 68). Similar comparisons again can be drawn from Margerum's (2008) work in which he describes these as "operational" initiatives or "action level" collaborations in which goals and actions are established by stakeholders (p. 488). In such systems, the use of bridging organizations function is to coordinate and oversee the efforts of diverse stakeholders (Westley, 1995; Hahn, Olsson, Folke, Johansson, 2006). Research conducted by McCreary (2010) emphasizes that when the USFS works with these bridging, or what she terms "umbrella" organizations, "forests partner with an outside entity that coordinates

partnership projects for the agency" whose coordination expands the agency's ability to partner (p. 153).

While these classifications serve as useful references to overarching partnership structures, practitioners often "weigh a broad range of factors" when entering into a partnership and evaluate on various criteria other than structural arrangement, such as:

> "relational issues (shared values, trust), institutional arrangements (type and size), functional aspects (work to be performed), centrality factors (necessity of task performed), and financial and non-financial benefits to the partner (partners' motivation)" (Seekamp et al., 2011, p. 626).

An important insight to be gleaned from the literature is that partnerships are truly unique management structures that can differ in both form and results in response to various economic, social, political, and environmental forces (Mangerum, 2008; Moore & Koontz, 2003; Selin, 1999; Seekamp et al. 2011). These dynamic relationships can vary in how much influence is exerted over one another, as well as the extent of public participation and outreach efforts, technical complexity, membership, and available resources (Mangerum, 2008; Selin, 1999). It is therefore important for managers seeking partnerships to understand and recognize the limitations, benefits, and challenges associated with the various classifications. By better understanding the full scope and diversity of partnership structures, recreation and resource managers may become more proficient in choosing and "design[ing] partnerships that provide the appropriate response to resolving intractable problems or taking advantage of significant opportunities" (Selin, 1999, p. 272).

2.7 Institutional Characteristics & Support

Leadership and institutional support are closely associated with the effectiveness and duration of partnerships (Andereck, 1997; Lasker et al, 2001; Lasker & Weiss, 2003; Mower & Kerstetter, 2006; McCreary, 2010; Selin & Chavez, 1994; Wondolleck & Yaffee, 2000; Weiss et al., 2002). Administrative

support and internal characteristics have frequently been cited throughout the literature as a precedent to the success or demise of partnership relations (Andereck, 1997; Lasker et. al. 2001; Selin & Chavez, 1993; Selin & Chavez, 1994). In a multiple case study performed by Andereck (1997), all interviewed partners cited "the need for support from upper level management" (p. 53). Hence, within partnership efforts the tone and actions of internal leaders will most directly influence personnel's willingness and ability to partner. Selin & Chavez (1993 & 1994) identify four organizational characteristics necessary within successful partnership frameworks: (1) providing internal support (i.e., incentives, staff time, office space, travel allowances); (2) flexible personnel and financial accounting procedures; (3) staff continuity throughout the partnership's duration; and, (4) acting as a mediator and liaison between the agency personnel and partnering groups. In a test of these frameworks, Andereck (1997) found administrative support and staff continuity as key indicators of agency motivation and participation in partnership efforts.

McCreary (2010) elaborates on the need of internal leadership and relational support when entering into and fostering a partnership. Specifically, McCreary (2010) found that, although agency personnel felt that the administrative staff "recognized the potential value of partnerships," the agency "had not committed resources or formalized a support structure to enable personnel to form and maintain partnerships" (p. 37). Mohr and Spekman (1994) suggest that within partnership leadership, pro-actively managing partnerships, as well as "the ability to convey a sense of commitment to the relationship," is paramount in motivating staff to engage in partnership activities to reap the full benefits of partnership success (p.148). Consistent with these findings, Lasker and Weiss (2003) state that synergistic partnerships benefit from having "boundary expanding leaders" whom have varied credentials and experience in multiple fields, as well as the ability to bridge diverse groups and appreciate different perspectives (p. 131).

In order for the agency to realize the full potential and capacity to partner, it is no longer enough "for administrators to give lip service to the value of partnerships" (Selin & Chavez, 1994, p.59). While partnerships have become politically popular as a response to fiscal constraints (McCreary, 2010;

Seekamp & Cerveny, 2010), "management systems have not been adequately developed to prioritize partnerships and incorporate them into forest plans" as a means to meet the goals and objectives of the USFS (Selin & Chavez, 1993, p. 6). Seekamp and Cerveny (2010) found that, frequently within the partnership process, "dedicated personnel often act outside of their job description to develop partnerships" (p. 10). Similarly, McCreary (2010) documents that "individual employees who are dedicated and innately skilled in the partnership process" account for the majority of partnering interactions (p. 29). However, it is not sufficient for agency's upper administration to assume employees will act independently to form and maintain partnership relations (Seekamp & Cerveny, 2010; Wondolleck & Yaffe, 2000). Sufficiently astute leadership among the agency is needed to encourage and support partnership efforts. Lasker et al. (2001) point out that the "administration and management of a partnership is the 'glue' that makes it possible" for multiple, diverse, and independent people to work together (p. 194). Thus, strong leaders within the agency must undertake the juggling act of facilitating productive interactions among partners, uniting diverse and sometimes conflicting groups, sharing power and authority, facilitating open and meaningful dialogues, and challenging ineffective or inefficient dialogue or action (Lasker et al., 2001; Seekamp & Cerveney, 2009; Weiss et al. 2002; Wondolleck & Yaffe, 2000).

CHAPTER 3 - METHODOLOGY

This research presents data from the third phase of a multi-phase study on USFS partnerships. In earlier qualitative phases, results revealed internal commitment to partners and external environments as indicative to the agency's capacity to engage in partnerships. In order to assess agency personnel's perceptions of these relationships and the variety of ways partnerships are being utilized, survey research methodology was deemed appropriate for this research phase. The following sections of this chapter provide the detailed descriptions of the procedures that were used in this study including: sampling, instrument development, pilot testing the survey instrument, data collection and management, and statistical analysis. This chapter concludes with a discussion regarding the scientific quality of the study and any potential limitations that existed.

3.1 Sampling

All personnel employed on national forests were the sampling universe. The USFS is comprised of 9 regions, numbering 1 through 10 (excluding Region 7 as it was consolidated into Regions 8 and 9 in 1965) in which 155 national forests are located. Each forest is composed of several ranger districts that report to the forest supervisor and typically have the closest connection to the surrounding communities through on-the-ground activities. As districts can vary considerably in size, some ranger districts are housed within the forest supervisor's office. In some cases, national forests are organized into zones. A zone is where two or more ranger districts share personnel and human resources staff. Overall, direction emanates from the forest supervisor's office (all of which report to the chief's office in Washington, D.C.), but due to spatial distribution there exists a degree of autonomy within administrative units (ranger districts, supervisors office, forest zones or areas).

To obtain a representative study population, all 155 national forests were analyzed and stratified based on one of the two key variables that emerged in earlier research phases as influencing the structure of partnerships on national forests: the degree of perceived internal commitment to partnerships. Stratification ensures that specific characteristics of individuals within a population are adequately represented in the sample (Creswell, 2003; Graziano & Raulin, 2004). In stratified random sampling, "subpopulations are defined in advance on the basis of one or more critical organismic variables that are likely to influence scores on the dependent measures" (Graziano & Raulin, 2004, p. 205). The other variable, external environment (i.e., proximity to nearby community types: urban, amenity, and rural), was not used as a selection criterion for this study, as districts of the same forest may have access to different pools of potential partners and many forests, with varying external environments, have been consolidated in recent years.

Internal commitment to partner was determined by assessing each national forests "Working Together" page on the forest's website and assigning all 155 national forests as having high, moderate or low internal commitment[2]. Seven variables (criteria) were used to assess internal commitment including: amount of information available regarding partnerships or collaborative efforts, the extent to which that information was campground host specific, inclusion and number of external links to facilitate partnering efforts, current contact information, current information, upcoming events or volunteer opportunities, partnership documentation and reviews, and the presence of a link to the USFS Partnership Resource Center (Table 1).

[2] Using website content was shown to be an effective proxy measure during an earlier research phase, in which these data were used in the triangulation process of a multiple case study of six national forests (see McCreary, 2010).

Table 1: Determinants of Internal Commitment Levels

Internal Commitment Criteria	Low	Moderate	High
Amount of information available regarding partnerships or collaborative efforts	<2 resources	2-5 resources	>5 resources
The extent to which that information was campground host specific	Only information available	--	--
Inclusion and number of external links to facilitate partnering efforts	<1 external link	1-3 external links	>3 external links
Current Contact Information	<1 contact	1-3 contacts	>3 contacts
Current information, upcoming events or volunteer opportunities	<1 of these criteria present	1-2 of these criteria present	All 3 criteria present
Partnership documentation and reviews	<1 additional material	1-3 additional materials	>3 additional materials
Link of Forest Service Partnership Resource Center	No	--	Yes

Once stratified, four national forests were randomly selected from each of the three categories (i.e., high, moderate, and low internal commitment) using randomizing software. A total of twelve national forests were deemed appropriate to adequately represent the USFS without placing significant burden on the system. Each region was represented in this study (Table 2); however, an inadequate response rate (i.e., participation from all ranger districts was not achieved) from a national forest located in Region 10 lent to randomly selecting another forest from the strata from which that forest was drawn (low internal commitment). The primary goal in acquiring our sampling frame was to obtain a representative sample of national forests with differing levels of commitment to partnership work; therefore, random selection within strata was more important than regional representation. While not all administrative units on the Region 10 forest participated in the study, questionnaires were sent to the forest supervisor's office and the districts that provided personnel lists, as the administrators consenting to participation were very supportive of the research project's goals. Thus, there were a total of 13 national forests participating in this research project.

Table 2: Regional Representation

Forest Identification	Internal Commitment Level	Region	N
1	Low	8	52
2	Moderate	3	100
3	High	6	221
4	High	4	169
5	Moderate	9	31
6	High	6	354
7	Low	8	97
8	High	2	171
9	Low	4	76
10	Moderate	5	101
11	Moderate	2	102
12	Low	1	69
13	Low	10	44

* Region 7 as it was consolidated into Regions 8 and 9 in 1965

Following national forest selection, respondents were identified following phone discussions with forest supervisors and, subsequently, district rangers. In total, 1587 agency personnel were solicited (via the internet) to complete the questionnaire. A breakdown of total respondents from each national forest by administrative level is provided in Table 3.

Table 3: Number of Respondents Reporting to Administrative Levels by National Forest

	National Forest														
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**Total**	**%**
Ranger District	18	43	77	41	13	45	34	53	25	26	39	18	8	440	73%
Forest Zone or Area	1	0	3	3	0	3	1	6	5	2	4	4	1	33	5%
Forest Supervisor's Office	8	6	3	8	3	8	1	3	7	12	8	4	6	77	13%
Multiple Units	0	6	9	9	0	5	2	6	3	3	4	5	4	56	9%
Total (N)	27	55	92	61	16	61	38	68	40	43	55	31	19	606	100%

* Column totals do not match due to missing data.

During conversations with forest supervisors, approval to allow forests to participate was addressed in order to maintain positive relations, gain consent, and acquire lists of personnel working with partnerships in the forest supervisor's office (Appendix A). In addition to phone discussions, forest supervisors received an emailed copy of the study overview, which included

key themes and research objectives (Appendix B). This purposive sampling strategy was utilized to ensure adequate representation from those in supervisory positions, as these employees are perceived as having different levels of influence and access to resources. Following discussions with forest supervisors on forests in which consent was given, district rangers were contacted to aid in establishing district personnel lists, with knowledge that all district personnel would be asked to participate (Appendix C).

Prior to communicating with USFS personnel, all phone scripts, associated documents, and the survey instrument were approved by the Southern Illinois University Human Subjects Committee (Appendix D).

3.2 Survey Research

According to Neuman (2004), survey research is the most widely used data gathering technique in sociology. For this study, survey research methodology was employed because of its ability to provide a quantifiable analysis of attitudes or opinions of the population being studied (Creswell, 2003). Survey research can measure many variables, test multiple hypotheses, and infer temporal order from questions about past behaviors, experiences, or characteristics (Neuman, 2004). Neuman (2004) further elaborates that surveys are appropriate when research questions seek to understand self-reported beliefs or behaviors, as is the purpose of the present research.

Dillman (2007) suggests that the quality of a survey begins with two fundamental assumptions: (1) that respondents to a self-administered survey instrument must first understand the content of what is wanted of them, as well as be motivated to follow through with such process; and (2) multiple attempts to contact potential respondents are essential to achieving

satisfactory response rates. Both of these principles were employed in this study to enhance response rates and will be discussed in greater detail in the following paragraphs.

3.3 Survey Instrument

A self-administered questionnaire (Appendix E) served as the primary instrument to collect personnel perceptions of the partnership structure on their forest unit, their access to volunteers (external environment), internal commitment, and partnership reliance levels. Due to the spatial distribution of respondents, an internet questionnaire was deemed appropriate to collect responses. The internet is inherently a much faster and cheaper way of alternative survey techniques, such as face-to-face or mail-back survey research methods (Neuman, 2004). Using the guidelines suggested by Dillman (2007), considerable time and attention was given to designing questionnaire components so that respondents felt independently motivated to answer each question accurately and completely, thereby reducing non-response errors and enhancing response rates.

Data were collected from specific questions regarding partnership characteristics. Survey questions were structured in three ways: (1) open-ended, (2) closed-ended with ordered response categories (i.e., 5 point Likert-type items based on a scale), and (3) closed-ended or partially open-ended with unordered response categories. Each form has unique advantages and disadvantages in their utility (see Dillman, 2007). Dillman (2007) explains that "shifting from one structure to another is the most fundamental tool available" when dealing with concerns of validity, improving response rates and encompassing respondent's full knowledge (p. 40-41).

The finalized questionnaire consisted of 42 questions. Some of the questions—in particular, respondents' partnering motivations and approach, leadership emphasis, forest-community linkages, concerns and barriers, and social value orientations—are not included in

this thesis. Rather, the analyses presented in this thesis include questions related to background information (e.g., employment background and experience working with partners), partnership networks, and partnership internal support mechanisms.

Institutional Support

To assess personnel's perception of administrative commitment and institutional support or recognition, respondents were asked to rate various response categories on a 5-point Likert-type scale ranging from Never (1) to Always (5), with a filter option of Does Not Apply. Specifically, items measured how often and to what extent respondents' personally received specific types of support or recognition for their work with partners (Q25 & 26; Table 4).

Table 3: Institutional Support and Recognition Items

Institutional Support and Recognition		
Question #	**Item**	**Scale**
25a	District Partnership Coordinator [a]	1=Never to 5=Always
25b	Forest Partnership Coordinator [a]	1=Never to 5=Always
25c	Regional Partnership Coordinator [a]	1=Never to 5=Always
25d	Public Affairs or Public Relations Staff Officer [a]	1=Never to 5=Always
25e	Program Manager [a]	1=Never to 5=Always
25f	Team Leader [a]	1=Never to 5=Always
25g	District Ranger [a]	1=Never to 5=Always
25h	Forest Supervisor [a]	1=Never to 5=Always
25i	Regional Staff[a]	1=Never to 5=Always
25j	National Partnership Office [a]	1=Never to 5=Always
25k	Other (please specify) [a]	Open-ended response
26a	Monetary (internal) [b]	1=Never to 5=Always
26b	Nonmonetary rewards or recognition (internal) [b]	1=Never to 5=Always
26c	Internal publicity (accomplishment report, newsletter, briefing) [b]	1=Never to 5=Always
26d	Community feedback, external award, or recognition [b]	1=Never to 5=Always
27e	Additional support staff, intern, or other personnel support [b]	1=Never to 5=Always
27f	Direct positive feedback from partner [b]	1=Never to 5=Always
27g	Direst positive feedback from your supervisor [b]	1=Never to 5=Always
28h	Other (please specify) [b]	Open-ended response

[a] Items preceded with lead-in statement: "How often do you personally receive support for your work with partners from people in the following agency positions?"
[b] Items preceded with lead-in statement: "To what extent have you received the following types of support or recognition for your work with partners?"

Partnership Reliance

Partnership reliance was assessed by asking respondents to document administrative reliance upon partnerships to achieve goals and complete tasks at three separate levels: five years ago, currently, and their desired level of reliance, along a five-point Likert scale ranging from Never (1) to A Great Deal (5), with two filter options of Unsure and Does Not Apply (Q27; Table 5). Additionally, six questionnaire components explored relationship performance metrics (i.e., costs, benefits, necessity) of partnerships, including how essential or nonessential partners are for accomplishing work, partner's usefulness in community outreach and strengthening community ties, as well as partners detracting from the agency's ability to achieve targets and diminishing USFS visibility (Q28; Table 5). Each item was measured using a five-point Likert scale ranging from Strongly Disagree (-2) to Strongly Agree (2), with a midpoint of Neutral (0) and a filter option of Unsure. Furthermore, as partnership reliance is likely related to external environment, a separate questionnaire component asked respondents to describe the setting of their administrative unit in terms of human population (Q32; Table 5).

Table 4: Administrative Reliance Items

Administrative Reliance on Partnerships		
Question #	**Item**	**Scale**
27a	Five years ago? [a]	-2=Strongly Disagree to 2=Strongly Agree
27b	Currently? [a]	-2=Strongly Disagree to 2=Strongly Agree
27c	Your desired level of reliance? [a]	-2=Strongly Disagree to 2=Strongly Agree
28a	Partners are absolutely essential for accomplishing critical work. [b]	-2=Strongly Disagree to 2=Strongly Agree
28b	Partners are ideal for projects that are extra or optional, but they are not essential. [b]	-2=Strongly Disagree to 2=Strongly Agree
28c	Partners are useful for community outreach and public service, but it is not always the most	-2=Strongly Disagree to 2=Strongly Agree

	efficient way to accomplish work. [b]	
28d	Partners detract from our ability to achieve our core mission or meet targets. [b]	-2=Strongly Disagree to 2=Strongly Agree
28e	An overdependence on partners has diminished the USFS visibility on our forest. [b]	-2=Strongly Disagree to 2=Strongly Agree
28f	Partnerships are helping our forest strengthen ties with local communities. [b]	-2=Strongly Disagree to 2=Strongly Agree
32	Which item best describes the setting of your administrative unit in terms of human populations?	1=Large metro[1], 2=Small metro[2], 3= Amenity[3], 4= Dense rural[4], 5= Remote rural[5]

[a] Items preceded with lead-in statement: "Please indicate the extent to which your administrative unit relies on partners to accomplish tasks."
[b] Items preceded with lead-in statement: "To what extent do you agree with the following statements as they relate to your administrative unit."
[1] Large metro: within 50 miles of a major metropolitan area (pop. > 500,000)
[2] Small metro: within 50 miles of a smaller urban area (pop. < 100,000-500,000 pop.)
[3] Amenity: nearby communities are destinations for retirees, amenity migrants, tele-commuters, seasonal residents and second home owners (recreation properties)
[4] Dense rural: surrounded by a large number of small towns or cities that are close together and heavily settled
[5] Remote rural: in a remote area with sparsely populated small towns separated by greater distances (20+ miles)

Partnership Networks

Partnership network questions (nominal) asked respondents to indicate within which functional areas they work with partners, as well as to select the types of partners they've personally been involved with from a list developed from Phase I and II of this research (Q19 & 20; see Appendix E for full list of functional units and partnership networks revealed during Phase I & II). Six additional questionnaire items further explored the nuances in degree and extent to which agency personnel worked with certain groups (Q21; Table 6). For these items, respondents were asked to rate the extent to which they typically worked with various types of partners or groups along a five-point Likert scale ranging from Never (1) to A Great Deal (5). Fourteen questionnaire items established distinctions between various approaches to partnerships by asking respondents to rate a range of questions related to partnership approaches along a five-point Likert scale ranging from Strongly Disagree (-2) to Strongly Agree (2) (Q29; Table 6). In order to explore nuances in the various approaches to partnerships, respondents were asked to rate several questions involving administrative emphasis along a five-point Likert scale

ranging from Strongly Disagree (-2) to Strongly Agree (2) (Q31; Table 6). Additionally, three questions relating to personal barriers were assessed along a five-point Likert scale ranging from Never (1) to A Great Deal (5) (Q38; Table 6).

Table 5: Partnership Network Items

Partnership Network Extent		
Question #	**Item**	**Scale**
21a	Groups or individuals who show up ONE TIME for a particular event or project (e.g., build a bridge, restoration project).[a]	1=Never to 5=A Great Deal
21b	Groups or individuals who show up periodically as needs arise (e.g., blowdown, fire, etc.). [a]	1=Never to 5=A Great Deal
21c	Groups or individuals involved in annual or periodic events (e.g., fish derby, campground cleanup, trail days). [a]	1=Never to 5=A Great Deal
21d	Groups or individuals involved in a long-term collaborative process (e.g., watershed council or regional planning). [a]	1=Never to 5=A Great Deal
21e	Groups or individuals that provide an ongoing assistance (e.g., trail work groups, interpretive or educational programs, campground hosts, concessionaires, contractors). [a]	1=Never to 5=A Great Deal
21f	Other types of project work. [a]	1=Never to 5=A Great Deal
21g	Other (please describe) [a]	Open-ended response
29a	We have more projects to do than our current available partners can handle. [b]	-2=Strongly Disagree to 2=Strongly Agree
29b	We have more partners than time to work with them.[b]	-2=Strongly Disagree to 2=Strongly Agree
29c	We have many partners who want to do projects that are of low priority. [b]	-2=Strongly Disagree to 2=Strongly Agree
29d	We do not have enough partners to meet the work we need to accomplish. [b]	-2=Strongly Disagree to 2=Strongly Agree
29e	We have the right amount of partners to match the projects we have and are able to manage these relationships. [b]	-2=Strongly Disagree to 2=Strongly Agree

Partnership Network Extent		
Question #	**Item**	**Scale**
29f	We only have time to work with a select handful of partners. [b]	-2=Strongly Disagree to 2=Strongly Agree
29g	We have access to many potential partners, but prefer to use a select few. [b]	-2=Strongly Disagree to 2=Strongly Agree
29h	We have access to many potential partners, but don't have time to solicit them. [b]	-2=Strongly Disagree to 2=Strongly Agree
29i	We don't always have projects ready when partners are ready to contribute. [b]	-2=Strongly Disagree to 2=Strongly Agree
29j	We would benefit if there were one coordinating group who could facilitate our work with all other partners. [b]	-2=Strongly Disagree to 2=Strongly Agree
29k	We are not working with individual volunteers as much as we did in the past. [b]	-2=Strongly Disagree to 2=Strongly Agree
29l	We have always had partnerships; our tactics haven't changed. [b]	-2=Strongly Disagree to 2=Strongly Agree
29m	We have become strategic about the partners with whom we work. [b]	-2=Strongly Disagree to 2=Strongly Agree
29n	We find it more efficient to work with organized groups who bring more resources and skills to the table than individual volunteers or informal groups. [b]	-2=Strongly Disagree to 2=Strongly Agree
31a	Leadership places a high priority on partnerships. [c]	-2=Strongly Disagree to 2=Strongly Agree
31b	My administrative unit has the necessary financial resources to work with partners. [c]	-2=Strongly Disagree to 2=Strongly Agree
31c	Partnerships are welcomes or tolerated by leaders, but they are not viewed as high priority. [c]	-2=Strongly Disagree to 2=Strongly Agree
31d	Partnerships are viewed as high priority, but it is more rhetoric than reality. [c]	-2=Strongly Disagree to 2=Strongly Agree
31e	Partnerships are not emphasized and not encouraged by leaders; they are the exception rather than the rule. [c]	-2=Strongly Disagree to 2=Strongly Agree

Partnership Network Extent		
Question #	**Item**	**Scale**
31f	Partnerships are strongly encouraged; they are part of our way of doing business. [c]	-2=Strongly Disagree to 2=Strongly Agree
31g	Partnerships are driven by individual initiative more than a management directive. [c]	-2=Strongly Disagree to 2=Strongly Agree
38a	I feel like I don't always have the skills to recruit and maintain partners. [d]	1=Never to 5=Always
38b	I don't have enough time to recruit and maintain partners. [d]	1=Never to 5=Always
38c	I don't get enough administrative support to help me manage partnerships. [d]	1=Never to 5=Always

[a] Items preceded with lead-in statement: "To what extent do you typically work with the following types of volunteers or partner groups?"

[b] Items preceded with lead-in statement: "To what extent do you agree with the following statements about your administrative unit's partnership approach?"

[c] Items preceded with lead-in statement: "To what extent do you agree with the following statements related to partnership emphasis within your administrative unit?"

[d] Items preceded with lead-in statement: " To what extent do you personally face the following barriers?"

3.4 Pilot Study

In order to ensure a respondent-friendly questionnaire design that supported overall USFS goals and avoided inconvenience factors (e.g., length and subordinating language), the instrument was pretested to enhance clarity and reduce burden. The pilot questionnaire was emailed to seven of the USFS personnel interviewed during Phase I, as well as reviewed by four graduate students at SIU. Pilot testing the questionnaire proved beneficial in that it helped identify grammatical mistakes, errors, and any misleading or confusing questions. Wording changes and clarification of questions were made in order to eliminate confusion and ambiguities as well as enhance content validity and readability.

3.5 Data Collection

SurveyMonkey™, an online survey administration tool, was utilized in order to facilitate survey construction and administration. A link to the web-based questionnaire was emailed to agency personnel in the fall of 2011 (n=1587). Following Dillman's (2007) tailored design method, four attempts were made to contact potential recipients over a three week time period including: (1) a prenotice email, which announced to potential respondents that a questionnaire would be sent (Appendix F); (2) an email with link to the questionnaire (Appendix G); (3) a reminder email with a link to the questionnaire (Appendix H); and, (4) a final reminder email with a link to the questionnaire (Appendix I). The prenotice was emailed to respondents three days prior to receiving the actual link to the questionnaire in order to inform respondents of the study's purpose, that their participation was voluntary, and that responses would remain entirely confidential. A week later a reminder email was sent with a link to the survey. One week following the first reminder email, a final request for participation and link to the survey was sent. To facilitate email tracking with such a large sample, forests were emailed the four attempts

at different intervals (Table 7). Intervals were determined once personnel emails lists were received from the forest supervisor and district ranger(s), or a designated contact(s).

Table 6: Questionnaire Mailing Schedule

Forest Identification	Region	Pre-Notice Date	1st Solicitation Date	1st Reminder Date	2nd Reminder Date
1	8	10-11-11	10-13-11	10-20-11	10-27-11
2	3	10-18-11	10-20-11	10-27-11	11-03-11
3	6	10-18-11	10-20-11	10-27-11	11-03-11
4	4	10-18-11	10-20-11	10-27-11	11-03-11
5	9	11-01-11	11-03-11	11-10-11	11-17-11
6	6	11-01-11	11-03-11	11-10-11	11-17-11
7	8	11-01-11	11-03-11	11-10-11	11-17-11
8	2	11-01-11	11-03-11	11-10-11	11-17-11
9	4	11-08-11	11-10-11	11-17-11	11-27-11
10	5	11-01-11	11-03-11	11-10-11	11-17-11
11	2	11-01-11	11-03-11	11-10-11	11-17-11
12	1	11-01-11	11-03-11	11-10-11	11-17-11
13	10	11-01-11	11-03-11	11-10-11	11-17-11

3.6 Data Management

Data were downloaded from SurveyMonkey™ into an Excel spreadsheet. Once downloaded into an Excel spreadsheet, the data were modified into a version that can be uploaded into Statistical Package for the Social Sciences 18.0 (SPSS) for statistical analysis. Once the data were uploaded into SPSS, codes were utilized for questionnaire items that included response categories such as Unsure (444) or All That Apply (222), as well as for missing data (999). In order to identify all missing data, frequencies, means and descriptive statistics were run for each questionnaire item. Due to limitations in SPSS ability to analyze contextual data (e.g. open-ended response categories), all open-ended questions were removed prior to data analysis. However, textual responses, when associated with a research objective, will be reported in the results section.

3.7 Data Analyses

Research Objective 1: Describe agency personnel's perceived level of administrative support for USFS partnerships and assess if differences exist between administrative

levels (i.e., ranger district, forest zone or areas, forest supervisor's office, multiple administrative units) and between national forests.

To address the first research objective, regarding administrative support for USFS partnerships, a one-way analysis of variance (ANOVA) was conducted on questionnaire item 25 to examine mean scores between administrative levels (i.e., ranger district, forest zone or area, forest supervisor's office, multiple administrative units) and between national forests. ANOVA was used instead of t-tests because of its ability to test differences between multiple variables at the same time and results are identical with t-tests. Because administrative levels and national forests both had more than three categories, a Bonferroni's post hoc test was used with adjusted *p*-values ($p = .05 \div$ # of comparisons).

It was determined that if mean internal commitment scores statistically differed among national forests, a dummy variable was created to determine the extent of administrative support present on national forests. When differences between national forests were found in comparative analyses, the dummy variable was used in all subsequent analyses. To create this composite variable, mean scores for the administrative support items (questionnaire items 25a-j) were then entered into an Excel spreadsheet and count data of the categorical means (i.e., Never, Rarely, Sometimes, or Often; Always was excluded as no mean score exceeded the Often category) were calculated. Forests were then assigned as having minimal, moderate, or considerable administrative support based of the average amount of support agency personnel reported receiving (Table 8). This variable is referred to as "coded support" throughout this thesis.

Table 7: Determinants for Composite Administrative Support Variable

Code Name	Code	Description	Forest Total	N
Minimal	1	At least 3 questionnaire items with means >3[a]	5	323
Moderate	2	At least 3 questionnaire items with means >3[a]; with at least 1 mean >4[b]	3	131
Considerable	3	At least 5 questionnaire items with means >3[a]; with at least 2 means >4[b]	5	157

[a] Response category was Sometimes.
[b] Response category was Often.

> ***Research Objective 2***: Explore the perceived level of administrative reliance for USFS partnerships and assess if differences exist between administrative levels and between national forests.

The second research objective, which explored levels of administrative reliance for USFS partnerships, was assessed by conducting two ANOVAs with questionnaire items 27 and 28 as the dependent variables and administrative levels (i.e., ranger district, forest zone or area, forest supervisor's office, multiple administrative units) and national forests as the independent variables. To further explore the nuances between national forests, two separate ANOVAs were conducted with statistically significant questionnaire items for Q27 and Q28 as the dependent variable, and external environment and coded support as the independent variables.
To pinpoint differences between the predictor variables, a Bonferroni post hoc test was used (p = .05 ÷ # of comparisons).

> ***Research Objective 3***: Reveal the types of institutional support or recognition agency personnel are receiving for their work with partnerships and assess if any differences exist between administrative levels and between national forests.

To address the third research objective, regarding the types of institutional support and recognition personnel receive for their work with partners, two ANOVAs were conducted with administrative levels and national forests as independent variables and the forms of support

(Q26) as the dependent variables. In addition, in order to assess if differences existed between the level of support and the type of recognition agency personnel received for their work with partners, a third ANOVA were conducted using the coded support level as the independent variable and the forms of support (Q26) as the dependent variable. A Bonferroni post hoc test was used when assessing significantly different variables ($p = .05 \div$ # of comparisons).

> ***Research Objective 4***: Evaluate the different types of partners that are utilized by the USFS and determine if any differences exist between administrative levels and between national forests.

The fourth research objective was to explore the types of partners that exist for USFS partnerships. To assess if the partnership types differed significantly between administrative levels and national forests, two ANOVAs were performed: the first using the types of partner groups (Q21) as the dependent variables and administrative levels as the independent variables, the second using Q21 as the dependent variables and national forests as the independent variables. Similar to research objective two, separate ANOVAs were employed with significantly different Q21 components as the dependent factor and external environment and coded support variables as the independent factors. A Bonferroni post hoc test was used when assessing significantly different variables ($p = .05 \div$ # of comparisons).

> ***Research Objective 5***: Identify and define partnership structural types based on partnership approach, access, and capacity, and determine if the institutional support characteristics and external environmental characteristics are related to the partnership structure being utilized.

The final research objective was to identify structures based on partnership approach, access, and capacity, and determine if the institutional support characteristics and external environment characteristics were related to the partnership structures being utilized. Cluster analysis was used in order to segment agency personnel into meaningful clusters based on respondents' partnership approach. As recommended by Norusis (2010), this technique offers a

particular advantage in that it allows the researcher to produce a classification scheme for previously unclassified data, with no preconceived notions or assumptions about the underlying data.

A mixed-method cluster analysis was performed on partnership approach, access, and capacity items (Q29) using SPSS (v.18) that, in addition to determining the optimal number of natural groupings (i.e., partnership structure types) within the data, also classified each participant into one of the identified clusters based on their similarities (Clatworthy, Buick, Hankins, Weinman, & Horne, 2005). Details of the mixed-methods cluster analysis are described in Section 3.8. Once the appropriate number of clusters was determined, the clusters were evaluated and reviewed in order to better understand the characteristics that differentiate, as well as link, those within a cluster. The solution's stability was validated by comparing two randomly selected subsets of the data. In order to determine the differentiating characteristics between the clusters, an ANOVA was conducted using Q29 items as the dependent variable and cluster membership as the independent variable.

To assess if the partnership types differed significantly between the segmented clusters, an ANOVA was performed using the types of partner groups (Q21) as the dependent variables and cluster membership as the independent variable. A separate ANOVA was performed in order to assess if relationship performance metrics (i.e., costs, benefits, necessity; Q28) differed significantly between clusters, using Q28 as the dependent variables and cluster membership as the independent factors. A Bonferroni post hoc test was used when assessing significantly different variables ($p = .05 \div \#$ of comparisons).

The clusters were then compared for differences among external environments and internal support levels. Two Chi-square tests were conducted to assess if external environmental

characteristics or the coded support variable differed significantly between clusters, with cluster membership as the dependent factor and external environment and coded support variables as the independent factors.

3.8 Mixed-Methods Cluster Analysis Procedure

This approach began by first randomly splitting the dataset in half, then utilizing the two-step cluster analysis to identify the optimal number of clusters on one-half of the dataset followed by K-means, or nonhierarchical, cluster analysis on the other half of the dataset, with the number of clusters specified from the two-step analysis. Prior to conducting cluster analysis, missing values were replaced by the series median for each individual national forest. In addition, as final solutions may depend on the order of the cases in the file, cases were randomly ordered by using the last digit of their ID number. The two-step and K-means procedure was performed using the procedural guidelines recommended by Norusis (2010). Respondent ID's served as the unit of analysis, with the respondents' responses to the fourteen components of Q29 at the categorical variables used in cluster formation.

The first step in the two-step procedure is the formation of preclusters. SPSS uses an algorithm in which cases are scanned one by one and it decides whether the current record should merge with the previously formed precluster or start a new precluster. The distance measure used to group cases was the log-likelihood criterion. After preclustering data, all cases in the same precluster are treated as a single entity (Norusis, 2010). Next, because the number of sub-clusters is much smaller than the number of initial cases, a standard agglomerative hierarchical method was utilized which determines the number of clusters automatically. For Q29 data, the algorithm produced an optimal three cluster solution.

Once the optimum number of clusters (i.e., 3) was produced, a K-means cluster analysis was performed using respondent's ID's as the unit of analysis, and the fourteen components of Q29 as the categorical variables. This clustering process uses the within-cluster variation as a measure to form homogeneous clusters. The process begins by first selecting K (the given number of clusters found iteratively by SPSS; or as in this study, by first conducting a two-step cluster analysis to derive the ideal number of clusters). Then, after the initial cluster centers have been selected, it then forms temporary clusters by sequentially assigning each case to the nearest cluster seed. As cases are assigned, cluster centers are recomputed based on all of the cases in the cluster. This process is repeated until there is little to no change in positions of the cluster centers or the maximum number of iterations was reached. After convergence is reached, all of the cases are assigned to clusters and the cluster centers are computed one last time.

Using the saved cluster membership variable, clusters were compared for differences among the dependent variables. Mooi and Sarstedt (2011) state, "Only if certain clusters exhibit significantly different means in these variables are they distinguishable" (p. 261); therefore, this involved conducting an ANOVA comparing the clusters with their responses to Q29 items. From this information, clusters were inspected for significant differences between criterion variables and then labeled accordingly.

Validating Cluster Solutions

Jain (2009) defines an ideal cluster as having "a set of points that is compact and isolated," demonstrating high similarities between objects in the same group, and low similarities between objects in different groups (p. 2). Jain (2009) further states clusters as being a "subjective entity," whose significance and interpretation as biased to the researchers' opinions (p. 2). Therefore, before interpretation of segments can begin, the solution's validity and stability

must be assessed. Cluster validity refers to the formal process of evaluating the results in a quantitative and objective fashion, while cluster stability measures the variability of the clustering solutions over different subsamples. Our approach evaluates the goodness of the clusters by first assessing the clustering variables, and then evaluating the segments' likeness of clusters under repeated measures of subgroups obtained from the whole data.

As suggested by Mooi & Sarstedt (2011), in order to validate the clustering solutions, the criterion validity was assessed. Generally, when conducting any sort of clustering method, the number of clustering variables need to be chosen carefully to provide clear differentiation between segments, yet be small enough so as not to "increase the odds that the variables are no longer dissimilar" (Mooi & Sarstedt, 2001, p. 242). Additionally, Mooi & Sarstedt (2011) warn that the elimination of certain variables may potentially lead to the loss of some of the most important information in the identification of niche clusters, making it impossible to identify true groupings within the data. If clustering variables display a high degree of collinearity between the variables, they are not sufficiently unique enough to identify distinct clusters, and specific aspects covered by those variables may be overrepresented in the cluster solution. Therefore, in order to ensure a high degree of separation between clustering variables, correlation coefficients were computed among each Q29 item. The criteria of .10, .30, and .50, irrespective of sign, were interpreted as having a small, medium, or large effect, respectively.

In order to assure a stability based solution, the likenesses between two different clustering solutions were compared from subsamples of the Q29 dataset. Conceptually, in a stable and well defined segment, clusters obtained from subsamples of the whole data set should be similar to those obtained from the whole data set. Therefore, low variability between the two clustering solutions is understood as an estimate for high consistency in the results obtained. We

followed this logical sequence by comparing the mean results of two clustering solutions on separate samples of the same population. This approach began by randomly splitting the data set into two halves and then running a two-step cluster analysis on one 50% subsample, and a separate K-means analysis on the remaining subsample. As indicated by the two-step solution, a three cluster solution was identified as optimal and used in the second analysis (K-means). Respondent ID's served as the unit of analysis, with the fourteen components of Q29 at categorical variables used to form clusters. An ANOVA was run using the saved cluster membership variable as the independent variable, and the fourteen components of Q29 as the dependent variable. Means for the two-step analysis and K-means analysis were then inspected for general trends and differences. In addition, the K-means subset solutions' means were compared to the complete dataset K-means solutions' means in order to assess for any significant differences. If the segments remain stable (i.e., do not change composition or its membership behaviors) by using different clustering procedures over the same data, a high degree of stability can be assumed (Mooi & Sarstedt, 2011).

In addition to Q29 items, separate ANOVAs on several other criterion variables hypothesized as having a theoretically based relationship with the clustering variables, but not included in the cluster analysis, were calculated for the K-means analysis. Additional criterion included seven questions relating to administrative emphasis towards partnerships (Q31) and three items assessing personal barriers (Q38). If segments differ between these external variables, we strengthen our conclusion that the clusters solutions are distinct groups (Mooi & Sarstedt, 2001).

3.9 Scientific Quality

In order to ensure our sample population was representative of the total population, response bias was assessed by conducting a wave analysis. Wave analysis allowed researchers to examine the returns of completed questionnaires and compare responses of selected items to determine if average responses changed (Creswell, 2003). Two assumptions are made when utilizing wave analysis: (1) that late respondents are nearly nonrespondents and (2) that an approximation of response bias can be drawn through comparative analysis between early and late respondents (Armstrong & Overton, 1977). Since three waves of mailings went to recipients of the questionnaire, dummy variables were created and respondents were divided by the wave to which they responded. Independent sample t-tests were conducted to identify if statistically significant differences existed between waves one, two and three for eight questionnaire items.

Wave Analysis Results

In general, the majority of respondents responded after receiving the initial email with attached questionnaire (58%), followed by 25 percent whom responded after the second email and 17 percent after receiving the third and final email. Respondents, regardless of when they completed the survey, had statistically similar responses for seven out of the eight questionnaire items (Table 9). Respondents in second wave, but not the third wave, were more likely to have served longer in their current position than those who responded in the first wave (Table 10). It is possible that respondents in the second and third wave, having served longer within the USFS, were in higher administrative level positions than those in wave one and, as such, had less immediate time to respond to the survey. For utilitarian purposes, even though one statistical difference existed, the mean difference is not large enough to be of value in a practical sense, suggesting the sample is representative of USFS personnel on these 13 national forests.

Table 8: Mean of Items in Wave Analysis

	Wave I		Wave II		Wave III	
Questionnaire Items	**n**	**μ(st. dev.)**	**n**	**μ(st. dev.)**	**n**	**μ(st. Dev.)**
How many years have you served in this position?	352	15.47(9.83)[a]	151	17.63(10.25)[b]	107	17.17(9.78)[ab]
Administrative unit(s) at which you currently work.	352	1.58(1.02)[a]	149	1.52(0.99)[a]	105	1.70(1.09)[a]
Is working with partners written in your formal position description?	273	0.58(0.50)[a]	123	0.52(0.50)[a]	85	0.66 (0.48)[a]
Do you have an item related to partners in your performance evaluation?	314	0.63(0.48)[a]	136	0.63(0.49)[a]	98	0.73(0.44)[a]
Do you currently work with partners?	352	0.85(0.36)[a]	152	0.86(0.35)[a]	107	0.86(0.35)[a]
Estimation of the total percentage of time spent working with partners.	300	2.05(1.11)[a]	129	2.05(1.09)[a]	91	2.24(1.22)[a]
Overall, how easy or difficult do you personally find working with partners to be?	300	0.35(1.06)[a]	129	0.29(1.07)[a]	96	0.32(0.92)[a]
In most cases, the benefits of working with partners outweigh the challenges.	304	0.75(0.96)[a]	133	0.86(0.86)[a]	97	0.80(0.98)[a]

Note. Superscripts that differ are significant at $p < .05$

Table 9: Independent Sample T-test: Comparing Respondents from Wave 1 & Wave 2

1st Wave vs. 2nd Wave			
Questionnaire Items	**df**	**t**	**Sig. (2-tailed)**
How many years have you served in this position?	501	-2.230	0.03
Administrative unit(s) at which you currently work.	499	0.54	0.59
Is working with partners written in your formal position description?	394	1.08	0.28
Do you have an item related to partners in your performance evaluation?	448	0.11	0.91
Do you currently work with partners?	502	-0.17	0.87
Estimation of the total percentage of time spent working with partners.	427	0.03	0.98
Overall, how easy or difficult do you personally find working with partners to be?	427	0.53	0.60
In most cases, the benefits of working with partners outweigh the challenges.	435	-1.22	0.23

Table 10: Independent Sample T-test: Comparing Responses from Wave 1 & Wave 3

1st Wave vs. 3nd Wave			
Questionnaire Items	**df**	**t**	**Sig. (2-tailed)**
How many years have you served in this position?	457	-1.56	0.12
Administrative unit(s) at which you currently work.	455	-1.11	0.27
Is working with partners written in your formal position description?	356	-1.31	0.19
Do you have an item related to partners in your performance evaluation?	410	-1.90	0.06
Do you currently work with partners?	457	-0.26	0.79
Estimation of the total percentage of time spent working with partners.	389	-1.41	0.16
Overall, how easy or difficult do you personally find working with partners to be?	394	0.25	0.80
In most cases, the benefits of working with partners outweigh the challenges.	399	-0.51	0.61

Table 11: Independent Sample T-tests: Comparing Responses from Wave 2 & Wave 3

2st Wave vs. 3nd Wave			
Questionnaire Items	**df**	**t**	**Sig. (2-tailed)**
How many years have you served in this position?	256	0.37	0.71
Administrative unit(s) at which you currently work.	252	-1.38	0.17
Is working with partners written in your formal position description?	206	-2.00	0.05
Do you have an item related to partners in your performance evaluation?	232	-1.77	0.08
Do you currently work with partners?	257	-0.10	0.92
Estimation of the total percentage of time spent working with partners.	218	-1.24	0.22
Overall, how easy or difficult do you personally find working with partners to be?	223	-0.21	0.84
In most cases, the benefits of working with partners outweigh the challenges.	228	0.50	0.62

CHAPTER 4 – RESULTS

The primary objectives of this study were to: (1) explore agency personnel's internal support network for partnership work; (2) quantify perceptions of administrative reliance for USFS partnerships; (3) reveal the types of institutional support that agency personnel are receiving for their work with partnerships; (4) evaluate the different types of partnerships being used by agency personnel; and, (5) identify structures based on partnership approach and capacity and determine if the institutional support characteristics are related to the partnership structure being utilized. Results of this study are organized and presented in the order of the five research objectives with subsections to distinguish comparisons (i.e., administrative level, national forest, level of support, and/or external environment), preceded by a brief description of the preliminary analysis, as well as an overview of the study respondents and response rates.

4.1 Preliminary Analysis

Prior to addressing data from specific research questions, supporting data, including a description of the sample, are presented. A preliminary check of all data was first conducted to ensure internal reliability (i.e., frequency distributions, missing data points, and when applicable measures of central tendency and standard deviations). Interestingly, preliminary findings revealed internal support characteristics identified on websites as poor indicators of perceived internal support (Barrow, Seekamp, & Cerveny, *in review*). In previous phases of this research, website content was proposed as an indicator of internal commitment (e.g., those forests ascribed as having high internal commitment levels based off website content would be indicative of high internal commitment perceptions). However, while web content may reveal facets of commitment levels, exploratory results do not support this assumption (Barrow et al, *in review*) Thus, while forests were stratified as having high, moderate, or low internal commitment based

on website content, analysis will not generalize to these three categories based on webpage content; rather, a composite variable (Table 12) was developed from respondents' self-reported perceptions of a suite of questionnaire items related to levels of internal support to enable comparisons between high, moderate, and minimal internal support levels.[3]

Table 12: Administrative Support Variable

Code Name	Forest Total	N (Percent)
Minimal	5	323 (56%)
Moderate	3	131 (23%)
Considerable	5	157 (21%)

To explore differences between national forests, the coded support variable will be used for between-group comparisons when significant differences between national forests are found. Additionally, the survey questionnaire included an item on respondents' perception of the external environment of the national forest (i.e., large metro, small metro, amenity, dense rural, and remote rural). Therefore, when appropriate, between-group comparisons of the external environment categories will be conducted to further explore significant differences between national forests. These additional analyses will facilitate an understanding as to why partnership approaches and perceptions may differ between national forests.

4.2 Response Rate and Description of Study Respondents

A total of 1584 email addresses were provided by forest supervisor's and district rangers; however, defunct email addresses reduced the valid sample size to 1528. Of the 1528 respondents successfully solicited for participation in this study, 611 individuals completed the

[3] Refer to Chapter 3, Section 3.7, Research Objective 1

questionnaire (40% response rate) and ten individuals elected to opt out of the survey. While the majority of respondents indicated ranger districts (73%) as the primary administrative unit to which they currently work, respondents also indicated currently working within the forest supervisor's office (13%) and forest zone or area (5%), with an additional nine percent indicating they worked within multiple administrative units. Respondents reported diverse specializations within the USFS including: forestry technicians (38%); supervisory positions (16%); resource specialist (13%; e.g., hydrologist, biologists, wildlife specialists, archeologists); administrative clerk or assistant (10%); staff officers (7%); district rangers (5%); program or team leaders (2%); forest supervisors (1%), and, other (8%). The average length of service in their current position was 7 years (μ=7.07; *SD*=6.80), with an average of 16 years of service with the USFS (μ=16.3; *SD*=10.00).

Most respondents (85%) indicated that they currently work with partners. Of those whom work with partners, the greatest proportion (38%) spend between 1 and 19 percent of their time working with partners in their current position, followed by: 33 percent spending between 20 and 39 percent of their time; 15 percent spending 40 and 59 percent of their time; 10 percent spending 60 and 79 percent of their time; and, 4 percent spending 80 and 100 percent of their time. More than one-half of respondents (53%) had no previous experience working with partners prior to joining the USFS. For those respondents not currently working with partners, the most frequently cited responses included: assignments not being conducive to working with partners (46%) and working with partners not being part of their job description (48%). Respondents frequently (73%) reported partnership work as an expected job assignment; however, working with partners was less frequently (65%) written within respondents' formal

position description. In addition, only one-third (33%) of respondents reported having a performance metric in their accomplishment reports.

The USFS program in which respondents most frequency reported working was recreation, wilderness, and heritage (52%), followed by: restoration (45%); vegetation and watershed management (42%); and, wildlife and fisheries habitat management (35%; Table 13). Other frequently utilized programs for partnership work include: inventory and monitoring (32%), land management planning (31%), and forest products (21%). The remaining program areas (i.e., law enforcement, grazing management, landownership management, and mineral and geology management) were utilized by less than 20 percent of respondents for partnership work. In addition, the average number of program areas in which agency personnel work with partners was two (μ=2.07, *SD*=1.83).

Table 13: Program Area(s) in which Partners are Utilized

Program Area	Frequency	Percent
Recreation, Wilderness, Heritage	269	52%
Restoration	233	45%
Vegetation & Watershed Management	219	42%
Wildlife & Fisheries Habitat Management	179	35%
Inventory & Monitoring	165	32%
Land Management Planning	161	31%
Forest Product	108	21%
Law Enforcement	98	19%
Grazing Management	85	17%
Landownership Management	75	15%
Mineral & Geology Management	50	10%

Respondents who currently work with partners reported a wide variety of partner types with whom they worked, with respondents generally working with about eight different types of partners (μ=8.34, *SD*=5.20). The most commonly reported types of partnerships agency personnel reported working with in the past three years include: other government agencies

(82%), private contractors, concessionaires, permit holders, or consultants (71%), and individual volunteers at sixty-four percent (Table 14). Over half of respondents reported working with schools, universities, or outdoor education groups (58%), local non-profit agencies or groups (57%), and government sponsored programs (50%). The following were utilized by over a quarter of respondents: agency or university researchers (39%), neighborhood or homeowner's associations (31%), prisoners, probationers, community services (30%), inter-agency coalitions (29%), local or regional corporations (28%), the Forest Service enterprise team or other similar governmental entities (28%), religious organizations, youth groups, camps, or teams (27%), planning meeting participants or watershed groups (25%), and historical societies, museums, cultural centers, or interpretive associations (25%). The most infrequently utilized partnership groups include: local civic groups (23%), the National Forest Foundation (23%), tribes or native corporations (23%), volunteer vacation or eco-tourism groups or student interns (19%), and coordinating groups that facilitate relationships with other partners (16%).

Table 14: Partnership Network

Partnership Types	Frequency	Percent
Other government agency (county, state, federal)	430	82%
Private contractors, concessionaires, permit holders, consultants	369	71%
Individual volunteers (including campground hosts)	332	64%
Schools, university, or outdoor education groups	304	58%
Local non-profit agencies or groups (e.g., environmental groups, recreation or outing clubs, stewardship or friends-of groups)	297	57%
Government sponsored programs (e.g., Job Corp, YCC, AmeriCorp)	259	50%
Private, corporate, nonprofit foundations, trusts, or granting institutions	242	47%
National non-profit organizations or environmental groups (e.g., land trusts, environmental organization, trail associations)	237	46%
Agency or university researchers	200	39%
Neighborhood or homeowner's associations	157	31%
Prisoners, probationers, community services	153	30%
Inter-agency coalition	147	29%
Local or regional corporations (e.g., forest products, utility, ranching)	144	28%
Forest Service enterprise team or other similar government entity	146	28%
Religious organizations, youth groups (e.g., scouts), camps, teams	138	27%
Planning meeting participants or watershed groups	129	25%
Historical societies, museums, cultural centers, or interpretive associations	128	25%
Local civic groups (e.g., Elks, VFW, Kiwanis, Rotary, Chamber)	116	23%
National Forest Foundation	117	23%
Tribes or native corporations	118	23%
Volunteer vacation or eco-tourism groups (e.g., Earth Corp) and student interns (e.g., the SCA)	98	19%
Coordinating groups (that facilitate relationships with other partners)	83	16%

4.3 Internal Support Networks for USFS Partnerships (Obj. 1)

Internal support networks were examined by asking respondents to indicate how often they personally received support for their work with partners from a list of ten agency positions. In general, respondents' primarily received support from district rangers (μ=3.52, *SD*=1.21), program managers (μ=3.29, *SD*=1.26), team leaders (μ=3.09, *SD*=1.31), and forest supervisors (μ=2.72, *SD*=1.33), receiving support less frequently from the regional partnership coordinator (μ=1.79, *SD*=1.06), the forest partnership coordinator (μ=2.13, *SD*=1.30) and the national partnership office (μ=1.49, *SD*=0.90; Table 15).

Table 15: Internal Support Network (Administrative Unit)

	μ (*SD*)					N
Support Provider	**Ranger District**	**Forest Zone or Area**	**Forest Supervisor's Office**	**Multiple Administrative Units**	**All Respondents**	
District Ranger[1]	3.57(1.21)[a]	3.27(1.36)[a]	3.42(1.15)[a]	3.48(1.15)[a]	3.52(1.21)	474
Program Manager[1]	3.25(1.30)[a]	3.21(1.23)[a]	3.69(1.08)[a]	3.10(1.17)[a]	3.29(1.26)	448
Team Leader[1]	2.99(1.33)[a]	3.39(1.34)[a]	3.45(1.15)[a]	3.03(1.32)[a]	3.08(1.31)	374
Forest Supervisor[1]	2.66(1.30)[a]	2.28(1.28)[a]	3.43(1.25)[b]	2.48(1.30)[a]	2.72(1.33)	467
Public Affairs/Staff Officer[1]	2.30(1.20)[a]	2.13(1.20)[a]	3.09(1.28)[b]	2.26(1.17)[a]	2.40(1.30)	449
District Partnership Coordinator[1]	2.26(1.45)[a]	2.57(1.47)[a]	2.37(1.40)[a]	1.94(1.32)[a]	2.25(1.43)	301
Forest Partnership Coordinator[2]	2.06(1.27)[a]	2.48(1.50)[ab]	2.68(1.39)[b]	1.79(1.11)[a]	2.13(1.30)	354
Regional Partnership Coordinator[1]	1.73(1.03)[a]	1.92(1.10)[ab]	2.22(1.12)[b]	1.60(1.07)[ab]	1.79(1.06)	392
Regional Staff[1]	2.06(1.17)[a]	1.83(0.95)[a]	2.89(1.13)[b]	2.36(1.27)[ab]	2.19(1.21)	444
National Partnership Office[1]	1.48(0.91)[a]	1.27(0.52)[a]	1.68(0.97)[a]	1.48(0.91)[a]	1.49(0.90)	419

[1]Subscripts that differ are significant @ $p<.01$.[2]Subscripts that differ are significant @ $p<.05$. Scale from 1 (Never) to 5 (Always), with items preceded by lead-in statement: "How often do you personally receive support for your work with partners from people in the following agency positions?

Administrative Levels

ANOVA results indicated there were statistically significant differences between reported levels of support from the regional partnership coordinator (F (3,388) =3.95, p<.01), the forest partnership coordinator (F (3, 350) =4.23, p<.01), the public affairs or public relations staff officer (F (3,445) =8.46, p<.00); forest supervisor (F (3, 463) =8.22, p<.01); and regional staff (F (3, 440) =9.73, p<.01). There were no statistically significant interactions between the extent to which respondents from different administrative units received support from the district partnership coordinator (F (3, 297) =0.99, p=.40), the program manager (F (3, 444) = 2.48, p=.06), team leaders (F (3, 370) =2.22, p=.09), district rangers (F (3, 470) =.79, p=.27), or the national partnership office (F (3, 415) =1.58, p=.20).

Post hoc comparisons (Table 15) indicated that respondents reporting to the forest supervisor's office (μ=2.22, *SD*=1.12) more frequently receive support from the regional partnership coordinator than those reporting to forest zones (μ=1.92, *SD*=1.10), ranger districts (μ=1.73, *SD*=1.03) or multiple administrative units (μ=1.60, *SD*=1.07). Respondents reporting to forest zones (μ= 2.48, *SD*=1.50) and the forest supervisor's office (μ=2.68, *SD*=1.39) received more support from the forest partnership coordinator than those reporting to ranger districts (μ=2.06, *SD*=1.27) or multiple administrative units (μ=1.79, *SD*=1.11). Respondents reporting to the forest supervisor's office (μ= 3.09, *SD*= 1.28) received more support from the public affairs or public relations staff officers than respondents reporting to ranger districts (μ= 2.30, *SD*=1.20), forest zones or areas (μ= 2.13, *SD*=1.20), or multiple administrative units (μ= 2.26, *SD*=1.17). Respondents reporting to ranger districts (μ=2.66, *SD*=1.30), forest zone or areas (μ= 2.28, *SD*=1.28), or multiple administrative units (μ=2.48, *SD*=1.30) indicated receiving less support from the forest supervisor than respondents reporting to the forest supervisor's office

(μ=3.43, *SD*=1.25). Similarly, respondents working within the forest supervisor's office (μ=2.89, *SD*=1.13) and multiple administrative units (μ=2.36, *SD*=1.27) reported receiving more support from regional staff than respondents working within ranger districts (μ=2.06, *SD*=1.17) or forest zones or areas (μ=1.83, *SD*=0.95).

National Forests

Means and standard deviations for support networks by national forest are provided in Appendix J, Table J.1. ANOVA indicated six support personnel as statistically different between, at least two, national forests: the district partnership coordinator (F (10, 276) = 5.57, $p<.01$), the forest partnership coordinator (F (10, 318) =4.22, $p<.01$), the regional partnership coordinator (F (10,358)=2.18, $p=0.02$), public affairs or public relations staff officers (F (10, 411) =3.90, $p<.01$), district rangers (F (10, 437)=2.65, $p=.01$), and the forest supervisor (F (10,430) =4.61, $p<.01$).

No significant differences were found between forests for levels of support received from: program managers (F (10,409) =1. 68, $p=.08$), team leaders (F (10, 343) =1.18, $p=.30$), regional staff (F (10,407) =1.26, $p=.25$), and the national partnership office (F (10,385) =1.54, $p=.12$).

4.4 Level of Administrative Reliance for USFS Partnerships (Obj. 2)

Respondents were asked to indicate the extent to which their administrative unit relied on partners to accomplish tasks and answer a series of questions regarding partnership reliance perceptions within their administrative unit, which hereafter are referred to as "relationship perceptions," as the question items reflect different combinations of the costs, benefits, and necessity of partnerships. These questions helped ascertain the respondents' perception of partnership reliance at three levels (five years ago, currently, and their desired level of reliance)

and helped reveal nuances among agency personnel's perceptions of partnerships. In general, all 13 national forests rely more heavily on partnerships to accomplish tasks now (μ = 4.22, *SD*=0.85) than five years ago (μ = 3.74, *SD*=0.95; Table 16). Additionally, respondents from these national forests desired less partnership reliance (μ = 3.84, *SD*=0.96) than the current levels reported. Furthermore, respondents indicated partnerships were useful for community outreach (μ=0.43, *SD*=1.03) and aiding in strengthening ties with local communities (μ=0.95, *SD*=0.85). Respondents also reported that partnerships were essential in accomplishing critical work (μ=0.83, *SD*=1.01) and not just utilized for extra or optional projects (μ=-0.09, *SD*=1.07; Table 17). Respondents generally disagreed that partners diminished the USFS visibility on forests (μ=-0.32, *SD*=1.16) and that partners detracted from their ability to achieve core missions or targets (μ=-0.75, *SD*=0.86).

Administrative Levels

ANOVA results indicated no significant differences between administrative unit reliance on partnerships five years ago (F (3,461) =0.65, p=.58) or currently (F (3,518) =2.67, p=.05) to achieve goals and complete tasks (Table 16). However, statistically significant differences were found between administrative units when asked their desired level of reliance (F (3,461) =5.01, p<.01). Post hoc comparisons revealed those reporting to the ranger districts office (μ=3.79, *SD*=0.97) desired less reliance on partnerships than those reporting to the forest supervisor's office (μ=4.19, *SD*=0.89). No differences between groups were found for those reporting to forest zones or areas (μ=4.10, *SD*=0.79) or multiple administrative units (μ=3.78, *SD*=0.96).

A set of six questions exploring relationship perceptions within the USFS revealed one significant difference between administrative levels (Table 17). Statistical differences existed between two administrative levels when asked to respond to the statement "Partners are

absolutely essential for accomplishing critical work" (F (3,541) =3.55, p=.02). Post hoc comparisons indicated those reporting to the forest supervisor's office (μ=1.07, SD=0.96) supported this statement more than those reporting to multiple administrative units (μ=0.62, SD=1.00). No significant differences between groups were found for those reporting to ranger districts (μ=0.78, SD=1.02) or forest zones or areas (μ=1.17, SD=0.91).

No significant differences were found between administrative units for the remaining five relationship perception questions: "Partners are ideal for projects that are extra or option, but they are not essential" (F (3,541) =1.53, p=.21); "Partners are useful for community outreach and public service, but it is not always the most efficient way to accomplish work" (F (3,538) =0.42, p=.74); "Partners detract from our ability to achieve our core mission or meet targets" (F (3,543) = 1.76, p=.15); "An over-dependence on partners has diminished the USFS visibility on our forest" (F (3,529) = 1.35, p=.26); and, "Partnerships are helping our forests strengthen ties with local communities," (F (3,540) = 1.67, p=.17).

Table 16: Administrative Reliance (Administrative Units)

	μ (*SD*)[1]					N
Level of Reliance	**Ranger District**	**Forest Zone or Area**	**Forest Supervisor's Office**	**Multiple Administrative Units**	**All Respondents**	
Five Years Ago	3.73(0.96)[a]	3.68(0.90)[a]	3.87(0.96)[a]	3.63(0.93)[a]	3.74(0.95)	465
Currently	4.18(0.89)[a]	4.54(0.58)[a]	4.39(0.73)[a]	4.13(0.77)[a]	4.22(0.85)	522
Desired	3.76(0.97)[a]	4.19(0.79)[ab]	4.19(0.82)[b]	3.78(0.96)[ab]	3.84(0.96)	465

[1]Subscripts that differ are significant @ $p<.01$. Scale from 1 (Never) to 5 (A Great Deal), with items preceded by lead-in statement: "Please indicate the extent to which your administrative unit relies on partners to accomplish tasks."

Table 17: Perceptions of Relationship Performance (Administrative Units)

	μ (*SD*)[1]					N
	Ranger District	**Forest Zone or Area**	**Forest Supervisor's Office**	**Multiple Administrative Units**	**All Respondents**	
Partners are absolutely essential for accomplishing critical work.	0.78(1.02)[ab]	1.17(0.91)[ab]	1.07(0.96)[a]	0.62(1.00)[b]	0.83(1.01)	545
Partners are ideal for projects that are extra or optional, but they are not essential.	-0.04(1.06)[a]	-0.13(1.11)[a]	-0.33(1.09)[a]	-0.13(1.06)[a]	-0.09(1.07)	545
Partners are useful for community outreach and public service, but it is not always the most efficient way to accomplish work.	0.43(1.01)[a]	0.27(1.20)[a]	0.44(1.03)[a]	0.53(1.09)[a]	0.43(1.03)	542
Partners detract from our ability to achieve our core mission or meet targets.	-0.71(0.87)[a]	-0.97(0.77)[a]	-0.90(0.79)[a]	-0.70(0.90)[a]	-0.75(0.86)	547
An overdependence on partners has diminished the USFS visibility on our forest.	-0.29(1.15)[a]	-0.43(1.17)[a]	-0.55(1.15)[a]	-0.19(1.21)[a]	-0.32(1.16)	533
Partnerships are helping our forest strengthen ties with local communities.	0.94(0.84)[a]	0.93(0.91)[a]	1.13(0.89)[a]	0.79(0.78)[a]	0.95(0.85)	544

[1]Subscripts that differ are significant @ $p<.01$. Scale from -2 (Strongly Disagree) to 2 (Strongly Agree), with items preceded by lead-in statement: "To what extent do you agree with the following statements as they relate to your administrative unit."

National Forests

Trends reveal that respondents, regardless of the national forest to which they work, had similar perceptions of administrative reliance on partnerships for all three categories (Appendix J, Table J.2). Specifically, ANOVA revealed no significant differences for current ($F(10,479) = 1.87$, $p = .05$) or desired ($F(10,421) = 1.21$, $p = .28$) levels of reliance between national forests. Significant differences were found between forests in terms of respondents' perceptions of administrative reliance on partnerships five years ago ($F(10,427) = 1.915$, $p = .04$).

The mean scores for each national forest as they relate to six questionnaire items exploring relationship perceptions can be found in Appendix J, Table J.3. ANOVA indicated only one statistical difference between, at least two, national forests when asked "An over-dependence on partners has diminished the USFS visibility in our forest" ($F(10,491) = 2.56$, $p = .01$). No significant between forest differences were found for the other items: "Partners are absolutely essential for accomplishing critical work" ($F(10,503) = 1.306$, $p = .22$); "Partners are useful for community outreach and public service, but it is not always the most efficient way to accomplish work" ($F(10,500) = 1.09$, $p = .37$); "Partners are helping our forest strengthen ties with local communities" ($F(10,502) = 1.73$, $p = .07$); "Partners are ideal for projects that are extra or optional, but they are not essential" ($F(10,504) = 0.85$, $p = .58$); and "Partners detract from our ability to achieve our core mission or meet targets" ($F(10,505) = 0.97$, $p = .47$).

Exploring Statistically Significant Variables between National Forests

Separate ANOVAs were conducted to examine the relationships between administrative reliance and external environment (i.e., large metro, small metro, amenity, dense rural, remote rural) and coded support levels (i.e., minimal, moderate, high), as a means of explaining why differences between national forests may exist. Evaluating the effect external environment had

on respondents' perceived level of administrative reliance on partners five years ago revealed no significant differences ($F(4,429) = 2.23$, $p = .06$); Table 18). Similarly, comparing the results between respondents' perceived level of administrative reliance on partnerships to accomplish tasks five years ago as a function of the coded support variable revealed no significant differences ($F(2,435) = 1.46$, $p = .23$); Table 19).

ANOVA indicated no significant differences between external environments and the statement, "An overdependence on partners has diminished the USFS visibility on our forests" ($F(4,493) = 0.75$, $p = .56$); Table 20). However, statistically significant between-group differences existed between the coded support variable and respondents' perception of this statement ($F(2,499) = 5.06$, $p < .01$); Table 21). Post hoc analysis indicate that respondents coded as having moderate ($\mu = -0.46$, $SD = 1.13$) or considerable ($\mu = -0.46$, $SD = 0.96$) internal support more strongly disagreed with this statement than those respondents coded as having minimal support ($\mu = -0.14$, $SD = 1.22$).

Table 18: Administrative Reliance (External Environment)

	μ (*SD*)[1]						N
Level of Reliance	**Large Metro**	**Small Metro**	**Amenity**	**Dense Rural**	**Remote Rural**	**Total**	
Five Years Ago	3.92 (0.97)[a]	3.62 (0.96)[a]	3.92 (0.89)[a]	3.65 (0.87)[a]	3.64 (0.98)[a]	3.75 (0.95)	434

[1]Subscripts that differ are significant @ $p<.01$. Scale from 1 (Never) to 5 (A Great Deal), with items preceded by lead-in statement: "Please indicate the extent to which your administrative unit relies on partners to accomplish tasks."

Table 19: Administrative Reliance (Coded Support Variable)

	μ (*SD*)[1]				N
Level of Reliance	**Minimal**	**Moderate**	**Considerable**	**Total**	
Five Years Ago	3.81 (0.95)[a]	3.71 (0.97)[a]	3.62 (0.95)[a]	3.75 (0.95)	438

[1]Subscripts that differ are significant @ $p<.02$. Scale from 1 (Never) to 5 (A Great Deal), with items preceded by lead-in statement: "Please indicate the extent to which your administrative unit relies on partners to accomplish tasks."

Table 20: Perceptions of Relationship Performance (External Environment)

	μ (*SD*)[1]						N
	Large Metro	**Small Metro**	**Amenity**	**Dense Rural**	**Remote Rural**	**Total**	
An overdependence on partners has diminished the USFS visibility on our forest.	-0.15 (1.18)[a]	-0.15 (1.17)[a]	-0.35 (1.23)[a]	-0.37 (1.07)[a]	-0.34 (1.12)[a]	-0.29 (1.15)	498

[1]Subscripts that differ are significant @ $p<.01$. Scale from -2 (Strongly Disagree) to 2 (Strongly Agree), with items preceded by lead-in statement: "To what extent do you agree with the following statements as they relate to your administrative unit."

Table 21: Perceptions of Relationship Performance (Coded Support Variable)

	μ (*SD*)[1]				N
	Minimal	**Moderate**	**Considerable**	**Total**	
An overdependence on partners has diminished the USFS visibility on our forest.	-0.14 (1.21)[a]	-0.46 (1.13)[a]	-0.46 (0.96)[a]	-0.28 (1.15)	502

[1]Subscripts that differ are significant @ $p<.02$. Scale from -2 (Strongly Disagree) to 2 (Strongly Agree), with items preceded by lead-in statement: "To what extent do you agree with the following statements as they relate to your administrative unit."

4.5 Types of Institutional Support and Recognition (Obj. 3)

Survey respondents were asked to respond to the statement "to what extent have you received the following types of support or recognition for your work with partners" from a list of seven internal and external support types (Table 22). In general, respondents most frequently received direct positive feedback (μ=3.53, *SD*=1.02) from the partnering groups or directly from their supervisor (μ=3.28, *SD*=1.14). Additionally, respondents reported rarely receiving any form of internal support or recognition such as monetary awards (μ=1.75, *SD*=0.93), nonmonetary rewards or recognition (μ=2.04, *SD*=1.05), or internal publicity (μ=1.98, *SD*=0.98). Similarly, respondents seldom received any community feedback, external awards, or recognition (μ=2.09, *SD*=1.08) nor any additional support staff, interns, or other personnel support (μ=1.75, *SD*=0.98).

Administrative Levels

ANOVA results indicated two statistically significant differences between administrative levels for the type of support or recognition received [i.e., direct positive feedback from their supervisor (F (3,494) =3.36, p=.02), and internal publicity (F (3,485) =2.85, p=.04); Table 22]. Respondents reporting to forest zones or areas (μ=1.71, *SD*=0.78) received statistically less internal publicity (e.g., accomplishments reports, newsletters, briefings) than those reporting to the forest supervisor's office (μ=2.25, *SD*=1.06). No significant differences were found between administrative levels for respondents reporting to ranger districts (μ=1.96, *SD*=0.97) or multiple administrative units (μ=1.86, *SD*=0.98) regarding internal publicity. Similarly, respondents reporting to the forest supervisor's office (μ=3.55, *SD*=0.99) received more direct positive feedback from their supervisor than those reporting to forest zones or areas (μ=1.71, *SD*=0.78). No significant differences between administrative levels for this type of support were found for

respondents reporting to ranger districts (μ=3.30, *SD*=1.17) or multiple administrative units (μ=3.10, *SD*=1.08).

No significant differences were found between administrative levels for the five other types of support or recognition. Regardless of administrative level, respondents received similar degrees of the following types of support or recognition: direct positive feedback from the partner (F (3,493) =1.84, *p*=.14); monetary awards (*F* (3,485) = 1.51, *p*=.21); nonmonetary rewards or recognition (*F* (3,488) =2.26, *p*=.08); community feedback, external award, or recognition (*F* (3,481) =1.66, *p*=.17); and, additional support, staff, interns, or other personnel support (*F* (3,493)=1.84, *p*=.08).

Table 22: Internal Recognition (Administrative Units)

	μ (*SD*)					N
Recognition	**Ranger District**	**Forest Zone or Area**	**Forest Supervisor's Office**	**Multiple Administrative Units**	**All Respondents**	
Monetary awards[1]	1.76(0.95)[a]	1.55(0.72)[a]	1.93(1.01)[a]	1.64(0.83)[a]	1.75(0.93)	489
Nonmonetary rewards [1]	2.04(1.06)[a]	1.77(0.85)[a]	2.28(1.15)[a]	1.88(0.93)[a]	2.04(1.05)	492
Internal publicity[2]	1.96(0.97)[ab]	1.71(0.78)[a]	2.25(1.06)[b]	1.86(0.94)[ab]	1.98(0.98)	489
Community feedback or external award[1]	2.06(1.06)[a]	1.97(1.08)[a]	2.35(1.18)[a]	2.02(1.05)[a]	2.09(1.08)	485
Additional support staff, intern, or other personnel support[1]	1.81(1.01)[a]	1.55(0.85)[a]	1.78(0.99)[a]	1.46(0.77)[a]	1.75(0.98)	466
Direct positive feedback from partner[1]	3.50(1.05)[a]	3.45(0.85)[a]	3.79(0.86)[a]	3.41(1.12)[a]	3.53(1.02)	497
Direct positive feedback from supervisor[2]	3.30(1.17)[ab]	2.84(0.97)[a]	3.55(0.99)[b]	3.10(1.08)[ab]	3.28(1.14)	498

[1]Subscripts that differ are significant @ $p<0.01$.[2]Subscripts that differ are significant @ $p<0.05$. Scale from 1 (Never) to 5 (Always), with items preceded by lead-in statement: "To what extent have you received the following types of support or recognition for your work with partners?"

National Forests

The means and standard deviations for the seven types of support or recognition are presented by national forest in Appendix J, Table J.4. ANOVA indicated five out of the seven types of support or recognition received as statistically different between, at least two, national forests: monetary awards ($F(10,450) = 2.75$, $p < .01$); nonmonetary rewards or recognition ($F(10,452) = 2.57$, $p < .01$); internal publicity ($F(10,449) = 2.50$, $p < .01$); community feedback, external award, or recognition ($F(10,445) = 2.13$, $p < .01$); and, additional support, staff, intern, or other personnel support ($F(10,430) = 1.92$, $p = .04$).

No significant differences were found between forests for the extent to which they received direct positive feedback from their partners ($F(10,458) = 1.01$, $p = .43$) or from their immediate supervisor ($F(10,458) = 0.75$, $p = .68$).

Coded Support Variable

ANOVA revealed statistically significant differences between the coded support levels for four types of support or recognition received (Table 23). Specifically, significant between-group differences were found for: monetary awards ($F(2,487) = 7.48$, $p < .01$); nonmonetary rewards or recognition ($F(2,490) = 8.59$, $p < .01$); internal publicity ($F(2,487) = 8.24$, $p < .01$); and, additional support, staff, intern, or other personnel support ($F(2,464) = 4.51$, $p = .01$). Post hoc comparisons indicate respondents from national forests coded as having minimal ($\mu = 1.65$, $SD = 0.90$) or moderate ($\mu = 1.67$, $SD = 0.90$) levels of support received fewer monetary awards than those coded as having considerable support ($\mu = 2.01$, $SD = 0.98$). Respondents from national forests coded as having considerable support ($\mu = 2.34$, $SD = 1.10$) received more nonmonetary rewards than those coded as having minimal ($\mu = 1.96$, $SD = 1.02$) or moderate ($\mu = 1.83$, $SD = 0.96$) internal support. Similarly, those coded as having considerable support ($\mu = 2.26$, $SD = 0.95$)

indicated receiving more internal publicity than those with minimal (μ=1.87, SD=0.98) or moderate (μ=1.85, SD=0.92) support levels. Additionally, those respondents from national forests coded as having considerable (μ=1.95, SD=1.07) support received more additional support staff, interns, or other personnel support for their work with partners than those coded as having minimal support (μ=1.63, SD=0.91).

No significant differences were found between coded support levels for: the amount of support or recognition received in the form of community feedback, external award, or recognition ($F(2,483) = 1.38$, $p = .25$); direct positive feedback from partnering groups ($F(2,495) = 0.20$, $p = .82$); and, direct positive feedback from their supervisor ($F(2,496) = 1.19$, $p = .31$).

Table 23: Internal Recognition (Coded Support Variable)

	μ (*SD*)[1]				N
Recognition	**Minimal**	**Moderate**	**Considerable**	**All Respondents**	
Monetary awards	1.65(0.90)[a]	1.67(0.90)[a]	2.01(0.98)[b]	1.75(0.93)	490
Nonmonetary rewards	1.96(1.02)[a]	1.83(0.96)[a]	2.34(1.10)[b]	2.04(1.05)	493
Internal publicity	1.87(0.98)[a]	1.85(0.92)[a]	2.26(0.95)[b]	1.97(0.98)	490
Community feedback, external award, or recognition	2.02(1.07)[a]	2.13(1.02)[a]	2.20(1.15)[a]	2.09(1.08)	486
Additional support staff, intern, or other personnel support	1.63(0.91)[a]	1.79(0.96)[ab]	1.95(1.07)[b]	1.75(0.98)	467
Direct positive feedback from partner	3.50(1.03)[a]	3.57(1.14)[a]	3.56(0.92)[a]	3.53(1.02)	498
Direct positive feedback from supervisor	3.21(1.16)[a]	3.38(1.09)[a]	3.36(1.14)[a]	3.29(1.14)	499

[1]Subscripts that differ are significant @ $p<0.02$. Scale from 1 (Never) to 5 (Always), with items preceded by lead-in statement: "To what extent have you received the following types of support or recognition for your work with partners?"

4.6 Types of Partners (Obj. 4)

In order to evaluate the different types of partnership being used by the USFS, separate ANOVAs were conducted to evaluate the extent to which respondents at different administrative levels and on different national forests typically worked with six different types of volunteers or partner groups. The most frequently reported groups with whom respondents worked were: groups or individuals that provide ongoing assistance (μ=3.40, SD=1.19); and, individuals involved in a long-term collaborative process (μ=2.95, SD=1.26; Table 24). Other groups with whom respondents often worked were: groups show up for specific projects or events (μ=2.78, SD=0.99), groups who show up periodically as needed (μ=2.92, SD=1.07), groups who show up for annual or periodic events (μ=2.90, SD=1.06), or individuals who show up for other types of project work (μ=2.51, SD=1.24).

Administrative Levels

ANOVA results indicated statistically significant differences between administrative units for the extent to which respondents worked with three of the six different types of volunteer or partner groups (Table 24). Specifically, statistically significant differences between administrative levels were found for the following: groups or individuals who show up periodically as needs arise ($F(3,512) = 2.72$, $p < .01$); groups or individuals involved in a long-term collaborative process ($F(3,512) = 5.24$, $p < .01$); and, groups or individuals involved or other types of project work ($F(3,512) = 3.18$, $p = .02$).

Post hoc comparisons revealed respondents reporting to ranger districts (μ=2.83, SD=0.98) and multiple administrative units (μ=2.73, SD=1.02) more frequently work with groups or individuals who show up one time for specific projects or events than those reporting to forest zones or areas (μ=2.59, SD=1.07). Respondents reporting to the forest supervisor's

office (μ=3.42, SD=1.13) utilize groups or individuals involved in long-term collaborative processes more frequently than respondents reporting to ranger districts (μ=2.82, SD=1.24). Additionally, respondents reporting to multiple administrative units (μ=2.84, SD=1.21) indicated using individuals or groups for other types of project work more frequently than respondents reporting to the ranger district (μ=2.41, SD=1.24).

No significant differences were found between administrative units for the extent to which they partnered with: groups or individuals who show up periodically as needs arise ($F(3,512) = 1.08$, $p = .36$); groups or individuals involved in annual or periodic events ($F(3,512) = 2.72$, $p = .05$); and, groups or individuals that provide ongoing assistance such as trail work groups, interpretive or educational programs, or campground hosts ($F(3,512) = 2.57$, $p = .05$).

Table 24: Partnership Network Extent (Administrative Units)

	μ (*SD*)					N
	Ranger District	**Forest Zone or Area**	**Forest Supervisor's Office**	**Multiple Administrative Units**	**All Respondents**	
Specific projects or events[1]	2.83(0.98)[a]	2.59(1.07)[b]	2.65(1.00)[ab]	2.73(1.02)[a]	2.78(0.99)	516
As needed[1]	2.98(1.04)[a]	2.41(1.32)[a]	2.71(0.99)[a]	3.14(1.10)[a]	2.92(1.07)	516
Annual or periodic events[1]	2.98(1.04)[a]	2.69(1.31)[a]	2.68(1.06)[a]	2.71(0.92)[a]	2.90(1.06)	516
Long-term collaborations[1]	2.82(1.24)[a]	3.03(1.38)[ab]	3.42(1.13)[b]	3.18(1.31)[ab]	2.95(1.26)	516
Ongoing assistance[1]	3.43(1.19)[a]	2.84(1.17)[a]	3.43(1.19)[a]	3.51(1.20)[a]	3.40(1.19)	516
Other types of work[2]	2.41(1.24)[a]	2.47(1.14)[ab]	2.78(1.28)[ab]	2.84(1.21)[b]	2.51(1.24)	516

[1]Subscipts that differ are significant @ $p<.05$. [2]Subscripts that differ are significant @ $p<.10$.Scale from 1 (Never) to 5 (A Great Deal), with items preceded by lead-in statement: "To what extent to you typically work with the following types of volunteers or partner groups?"

National Forests

The means and standard deviations for the six different volunteer or partner types are presented by national forest in Appendix J, Table J.5. ANOVA indicated one statistically significant difference between forests for the extent to which they typically work with groups or individuals who show up periodically as needs arise ($F(10,476) = 2.65$, $p < .00$). No statistically significant differences were found between national forests for the extent to which they worked with: groups or individuals who show up one time for a particular event or project ($F(10,476) = 1.53$, $p = .13$); groups or individuals involved in annual or periodic events ($F(10,476) = 1.09$, $p = .37$); groups or individuals in a long-term collaborative process ($F(10,476) = 1.84$, $p = .05$); groups or individuals that provide ongoing assistance ($F(10,476) = 1.75$, $p = .07$); or, other types of project work ($F(10,476) = 1.44$, $p = .16$).

Exploring Statistically Significant Variables between National Forests

Separate ANOVAs were conducted to examine the differences between external environments (i.e., large metro, small metro, amenity, dense rural, remote rural) and coded support levels (i.e., minimal, moderate, high) for the partnership network items to examine if these grouping variables may explain the statistically significant differences found between national forests (Table 25). ANOVA indicated significant differences between external environments for the extent to which national forests worked with groups or individuals who show up periodically as needs arise ($F(4,458) = 2.91$, $p = .02$). The results of the post-hoc analysis reveal that respondents who described their administrative unit as being large metro more frequently worked with groups or individuals who show up periodically as needs arise ($\mu = 3.20$, $SD = 1.15$) than those who described their administrative unit as remote rural ($\mu = 2.78$, $SD = 1.02$). ANOVA results revealed no significant differences between the coded support variable and the

extent to which respondents worked with groups or individuals who show up periodically as needs arise ($F(2,484) = 0.18$, $p = .84$); Table 26).

Table 25: Partnership Network (External Environment)

	μ (*SD*)[1]						N
	Large Metro	**Small Metro**	**Amenity**	**Dense Rural**	**Remote Rural**	**Total**	
As needed	3.20(1.15)[a]	2.78 (1.17)[ab]	2.95 (0.99)[ab]	2.85 (1.08)[ab]	2.78(1.02)[b]	2.91 (1.07)	463

[1]Subscipts that differ are significant @ $p<.01$.Scale from 1 (Never) to 5 (A Great Deal), with items preceded by lead-in statement: "To what extent to you typically work with the following types of volunteers or partner groups?"

Table 26: Partnership Network (Coded Support Variable)

	μ (*SD*)[1]				N
	Minimal	**Moderate**	**Considerable**	**Total**	
As needed	2.93 (1.09)[a]	2.94 (1.13)[a]	2.87 (1.00)[a]	2.92 (1.07)	487

[1]Subscipts that differ are significant @ $p<.02$.Scale from 1 (Never) to 5 (A Great Deal), with items preceded by lead-in statement: "To what extent to you typically work with the following types of volunteers or partner group

4.7 Identifying Partnership Structural Types (Obj.5)

In order to evaluate and define the different types of partnership structures that exist within the USFS and determine if the institutional support characteristics and external environmental characteristics were related to the partnership structure being used, data were analyzed utilizing several statistical procedures at multiple levels. Using respondents' responses to fourteen partnership approach items, a mixed method cluster analysis was performed that generated a three-cluster solution. The solution's stability was validated by comparing two randomly selected subsets of the data, running similar statistical measures as performed on the complete dataset (i.e., a mixed-method cluster analysis), and subsequently comparing the subset and complete solutions' means for significant differences.

Using final cluster membership as the independent variable, ANOVA analysis revealed the three clusters as differing in demand for partners, available time, internal coordination and capacity, and partnership dependency. ANOVA was conducted to evaluate the extent to which respondents within the different clusters typically worked with six different types of volunteers or partner groups. In general, respondents within the three clusters differed in the extent to which they worked with groups or individuals involved in long term collaborations, those providing ongoing assistance, and those providing other types of project work. Two Chi-square tests revealed differences among the three clusters in terms of how personnel described the external environment in terms of human population as well as overall support. In addition, ANOVA analysis on six questions exploring relationship performance metrics (i.e., costs, benefits, necessity) revealed respondents within the three clusters as differing in the degree to which they find partners essential or efficient as a way of accomplishing work, as well as how they perceive

partners as detracting and diminishing USFS visibility. The following subsections describe these findings in greater statistical detail.

Validating Cluster Variables

In order to ensure a high degree of separation between clustering variables, correlation coefficients were computed among each Q29 item (Table 27). The criteria of .10, .30, and .50, irrespective of sign, were interpreted as having small, medium, or large effect, respectively. Overall, only six clustering variables displayed effect sizes greater than .30 (medium effect), thus, using all Q29 items as clustering variables were deemed appropriate as each variable demonstrated relative independence.

Table 27: Correlation Among Fourteen Clustering Variables

	29a	29b	29c	29d	29e	29f	29g	29h	29i	29j	29k	29l	29m	29n
29a	1													
29b	0.16	1												
29c	0.11	0.37	1											
29d	0.40	-0.13	-0.10	1										
29e	-0.31	-0.23	-0.19	-0.34	1									
29f	0.14	0.29	0.22	0.00	-0.20	1								
29g	0.02	0.11	0.17	-0.08	0.03	0.21	1							
29h	0.19	0.34	0.25	0.15	-0.23	0.37	0.20	1						
29i	0.11	0.25	0.28	-0.03	-0.11	0.21	0.05	0.28	1					
29j	0.23	0.11	0.08	0.20	-0.20	0.15	0.01	0.18	0.18	1				
29k	0.08	0.03	0.04	0.00	-0.00	0.08	0.15	0.09	0.11	0.17	1			
29l	-0.06	-0.03	0.01	-0.09	0.18	-0.03	-0.08	-0.10	-0.05	-0.01	-0.06	1		
29m	-0.01	0.03	0.02	-0.07	0.11	0.13	0.15	0.04	-0.00	-0.00	0.01	-0.07	1	
29n	0.19	0.11	0.11	0.03	-0.01	0.18	0.18	0.12	0.17	0.20	0.19	-0.01	0.27	1

Cluster Subsample Results

In order to assure a stability based solution, the likeness between two different clustering solutions (i.e., two-step analysis and K-means analysis) were compared from subsamples of the Q29 dataset and inspected for differences. The dataset was randomly split into two halves and a two-step cluster analysis was run on one 50% subsample, and a separate K-mean analysis on the remaining subsample. ANOVA was run using the saved cluster membership variable as the independent variable, and the fourteen items of Q29 as the dependent variables for both subsamples. The means of the two-step analysis and the K-means analysis are shown in Figure 2. In addition, the K-means subset solutions' means were compared to the complete dataset K-

means solutions' means and shown in Figure 3. Although a few of the subsample cluster means differed, the overall patterns were consistent as an indication of stable and differentiable cluster structures (Table 28 &Table 29).

Separate ANOVAs on several other criterion variables hypothesized as having a theoretically based relationship with the clustering variable, but not included in the cluster analysis, were calculated for the subsample K-means analysis and evaluated for mean differences. Several statistically significant differences were found between subsample cluster segments (Table 30). Cluster 3 and Cluster 1 differed in two questionnaire items related to administrative emphasis. Cluster 3 was notably different from Clusters 1 and 2 for several barriers, including not having enough time to recruit and maintain partners, and not getting enough administrative support the manage partnerships (Table 31). As mentioned previously, cluster analysis involves some level of ambiguity and clusters with similar structures, size and characteristics are rarely guaranteed. However, given the trends we found between different clustering techniques and between different subsamples, we conclude the complete dataset K-means clusters as distinct and differentiable groups, with criterion validity, that exhibit a high degree of stability over repeated measures.

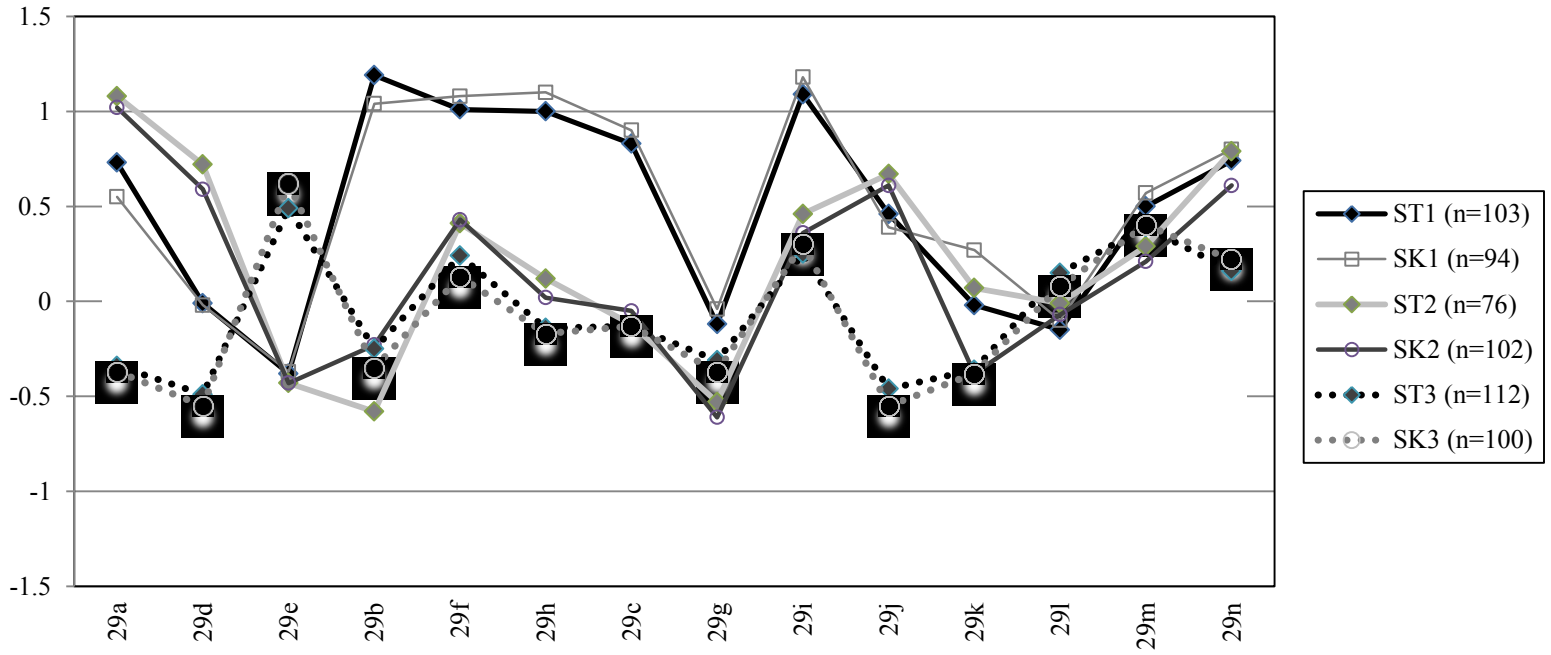

Figure 2: Partnership Approach: Two-step (ST) & K-means (SK) Subsamples

Table 28: Clusters Derived from Two-Step (ST) & K-means (SK) Clustering Subsamples

	Cluster 1[1]		Cluster 2[1]		Cluster 3[1]	
	ST1 (n=103)	SK1 (n=94)	ST2 (n=76)	SK2 (n=102)	ST3 (n=112)	SK3 (n=100)
More projects to do than current partners can handle.	0.73[a]	0.60[a]	1.08[a]	0.94[a]	-0.34[a]	-0.41[a]
More partners than time to work with them.	1.19[a]	0.93[a]	-0.58[a]	-0.19[b]	-0.25[a]	-0.37[a]
Many partners who want to do projects of low priority.	0.83[a]	0.89[a]	-0.12[a]	-0.13[a]	-0.13[a]	-0.09[a]
Not enough partners to meet the work we need to accomplish.	-0.01[a]	-0.02[a]	0.72[a]	0.70[a]	-0.49[a]	-0.54[a]
Right amount of partners to match the projects.	-0.38[a]	-0.36[a]	-0.43[a]	-0.41[a]	0.49[a]	0.57[a]
Only enough time to work with a select handful.	1.01[a]	0.99[a]	0.41[a]	0.55[a]	0.24[a]	0.05[a]
Access too many potential partners, but prefer to use a select few.	-0.12[a]	0.05[a]	-0.53[a]	-0.53[a]	-0.31[a]	-0.30[a]
Access too many potential partners, but don't have time to solicit.	1.00[a]	1.04[a]	0.12[a]	0.14[a]	-0.14[a]	-0.22[a]
Don't have projects ready when partners are ready.	1.09[a]	1.15[a]	0.46[a]	0.37[a]	0.25[a]	0.31[a]
Would benefit from one coordinating group who could facilitate our work.	0.46[a]	0.31[a]	0.67[a]	0.61[a]	-0.46[a]	-0.57[a]
Not working with individual volunteers as much as we did in the past.	-0.02[a]	0.39[b]	0.07[a]	-0.22[a]	-0.36[a]	-0.36[a]
Always had partners; tactics haven't changed.	-0.15[a]	-0.23[a]	-0.01[a]	-0.10[a]	0.15[a]	0.13[a]
Become strategic about the partners with whom we work.	0.50[a]	0.55[a]	0.29[a]	0.29[a]	0.39[a]	0.43[a]
More efficient to work with organizations who bring more resources and skills to the table than individual volunteers.	0.74[a]	0.84[a]	0.79[a]	0.51[a]	0.16[a]	0.24[a]

[1]Subscipts that differ between clusters are significant @ $p<.01$. Scale from -2(Strongly Disagree) to 2(Strongly Agree), with items preceded by lead-in statement: "To what extent do you agree with the following statements about your administrative unit's partnership approach?"

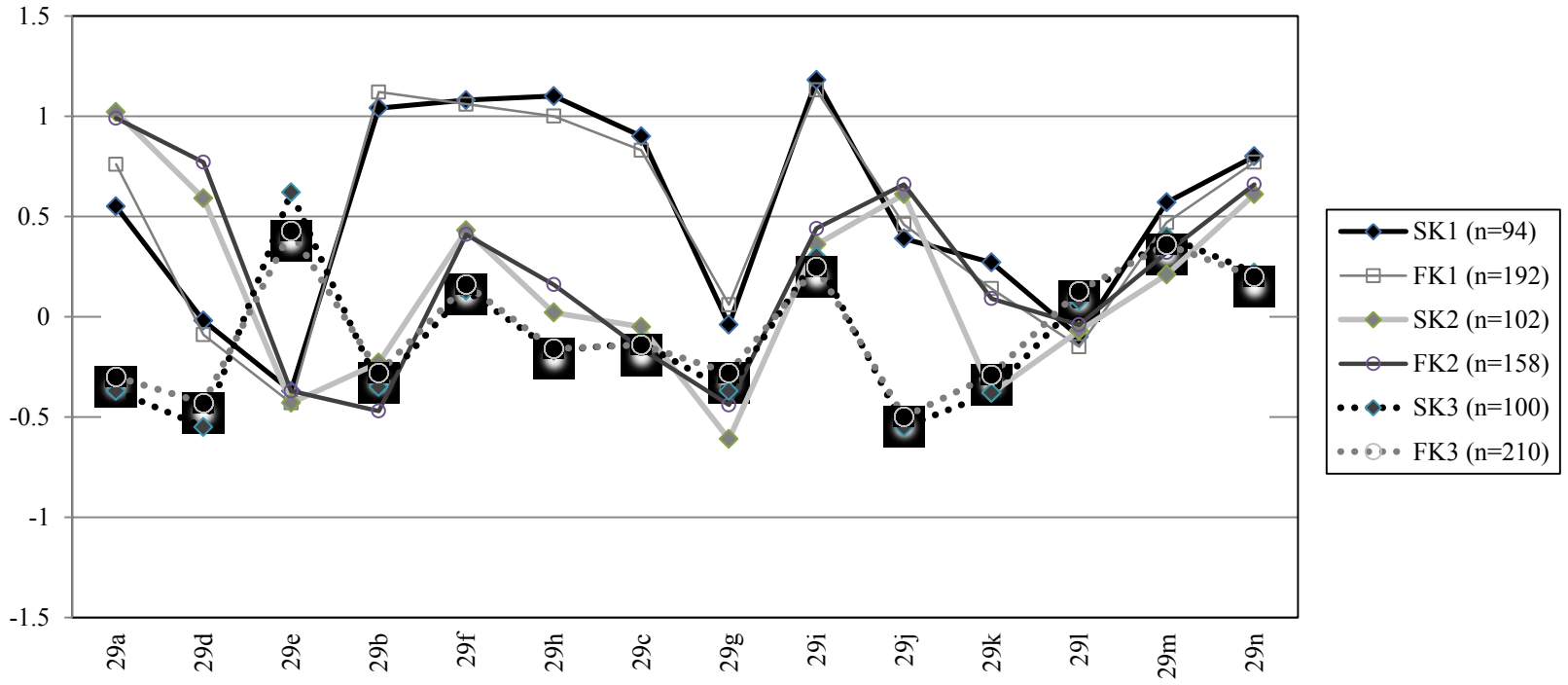

Figure 3: Partnership Approach: Subsample K-means (SK) & Full Model K-means (FK) Clustering

Table 29: Clusters Derived from K-means (SK) Subsamples & Full Model K-means (FK)

	Cluster 1[1]		Cluster 2[1]		Cluster 3[1]	
	SK1 (n=94)	FK1 (n=192)	SK2 (n=102)	FK2 (n=158)	SK3 (n=100)	FK3 (n=210)
More projects to do than current partners can handle.	0.60[a]	0.76[a]	0.94[a]	0.99[a]	-0.41[a]	-0.30[a]
More partners than time to work with them.	0.93[a]	1.12[a]	-0.19[a]	-0.47[a]	-0.37[a]	-0.28[a]
Many partners who want to do projects of low priority.	0.89[a]	0.83[a]	-0.13[a]	-0.16[a]	-0.09[a]	-0.114[a]
Not enough partners to meet the work we need to accomplish.	-0.02[a]	-0.09[a]	0.70[a]	0.77[a]	-0.54[a]	-0.43[a]
Right amount of partners to match the projects.	-0.36[a]	-0.40[a]	-0.41[a]	0.37[a]	0.57[a]	0.43[a]
Only enough time to work with a select handful.	0.99[a]	1.06[a]	0.55[a]	0.41[a]	0.05[a]	0.16[a]
Access too many potential partners, but prefer to use a select few.	0.05[a]	0.06[a]	-0.53[a]	-0.44[a]	-0.30[a]	-0.28[a]
Access too many potential partners, but don't have time to solicit.	1.04[a]	1.00[a]	0.14[a]	0.16[a]	-0.22[a]	-0.16[a]
Don't have projects ready when partners are ready.	1.15[a]	1.13[a]	0.37[a]	0.44[a]	0.31[a]	0.25[a]
Would benefit from one coordinating group who could facilitate our work.	0.31[a]	0.46[a]	0.61[a]	0.66[a]	-0.57[a]	-0.50[a]
Not working with individual volunteers as much as we did in the past.	0.39[a]	0.14[a]	-0.22[a]	0.09[a]	-0.36[a]	-0.29[a]
Always had partners; tactics haven't changed.	-0.23[a]	-0.15[a]	-0.10[a]	-0.04[a]	0.13[a]	0.13[a]
Become strategic about the partners with whom we work.	0.55[a]	0.47[a]	0.29[a]	0.32[a]	0.43[a]	0.36[a]
More efficient to work with organizations who bring more resources and skills to the table than individual volunteers.	0.84[a]	0.77[a]	0.51[a]	0.66[a]	0.24[a]	0.20[a]

[1]Subscipts that differ between clusters are significant @ $p<.01$. Scale from -2(Strongly Disagree) to 2(Strongly Agree), with items preceded by lead-in statement: "To what extent do you agree with the following statements about your administrative unit's partnership approach?"

Table 30: Mean Values for Administrative Emphasis (Subsample K-means (SK) Clustering)

	μ (*SD*)[1]				N
	SK1	**SK2**	**SK3**	**Total**	
Leadership places a high priority on partnerships.	0.88(1.00)[a]	0.88(0.88)[a]	0.70(0.94)[a]	0.82(0.94)	259
My administrative unit has the necessary financial resources to work with partners.	-0.87(0.92)[a]	-0.69(0.98)[ab]	-0.42(1.03)[b]	-0.66(0.99)	245
Partnerships are welcomes or tolerated by leaders, but they are not viewed as high priority.	-0.41(1.00)[a]	-0.44(0.98)[a]	-0.48(0.82)[a]	-0.44(0.93)	254
Partnerships are viewed as high priority, but it is more rhetoric than reality.	0.08 (0.96)[a]	-0.24(0.98)[ab]	-0.36(0.81)[b]	-0.18(0.94)	251
Partnerships are not emphasized and not encouraged by leaders; they are the exception rather than the rule.	-0.86(0.84)[a]	-0.85(0.77)[a]	-0.81(0.72)[a]	-0.84(0.77)	251
Partnerships are strongly encouraged; they are part of our way of doing business.	0.70 (0.93)[a]	0.81 (0.92)[a]	0.68 (0.82)[a]	0.73 (0.89)	258
Partnerships are driven by individual initiative more than a management directive.	0.70 (1.03)[a]	0.38 (0.94)[a]	0.64 (0.93)[a]	0.57 (0.97)	252

[1]Subscipts that differ are significant @ $p<.03$. Scale from -2(Strongly Disagree) to 2(Strongly Agree), with items preceded with lead-in statement: "To what extent do you agree with the following statements related to partnership emphasis within your administrative unit?"

Table 31: Mean Values for Personal Barriers (Subsample K-mean (SK) Clustering)

	μ (*SD*)[1]				N
	SK1	**SK2**	**SK3**	**Total**	
I feel like I don't always have the skills to recruit and maintain partners.	2.56 (0.81)[a]	2.55 (0.88)[a]	2.33 (0.98)[a]	2.48 (0.89)	210
I don't have enough time to recruit and maintain partners.	3.80 (1.02)[a]	3.61 (1.04)[a]	3.08 (0.99)[b]	3.50 (1.06)	215
I don't get enough administrative support to help me manage partnerships.	3.47 (1.27)[a]	3.17 (1.01)[a]	2.65 (1.00)[b]	3.10 (1.15)	214

[1]Subscipts that differ are significant @ $p<.03$. Scale from 1(Never) to 5(Always), with items preceded with lead-in statement: "To what extent do you personally face the following barrier

Cluster Analysis on Complete Dataset

The two-step cluster analysis indicated a three cluster solution as optimal, which was used as the preset number of clusters in subsequent K-means analyses. For the K-means analysis using the complete dataset, convergence was reached after 10 iterations. Cluster membership was distributed nearly equally, with 34% (n=192) in cluster 1, 28% (n=158) in cluster 2, and 38% (n=210) in cluster 3. Based on ANOVA results, three unique partnership structure types were identified and labeled by assessing the mean values for differentiating variables contributing to cluster membership (Table 32). A summary of cluster membership can be found in Table 37.

Cluster Profiles

Members of Cluster 1 (n=192; 34%) indicated having more projects to do than their current partners could handle. Respondents of this cluster indicated having considerably more partners than time to work with, little time to solicit potential partners, and having many current partners wanting to do projects that are of low priority than either Cluster 2 or Cluster 3. Despite having many partners, respondents indicated not having the right amount of partners to meet the work they need to accomplish, and benefiting by working with organizations or groups who bring additional resources or skills. From these results, it was determined that respondents in this segment have a surplus of partners and a moderate level of internal coordination and interdependence when using partnerships, but have time constraints. Therefore, this segment was labeled *partner-surplus, moderate capacity*.

Respondents in Cluster 2 (n=158; 28%) consistently indicated having too few partners and more projects to do than their current partners could handle. Compounding their lack of partners, this group lacks access to potential partners and has limited capacity to work with more partners than they currently do. Not surprisingly, this cluster finds it more efficient to work with

organized groups who bring more resources and skills to the table, and indicated they would benefit if there were one coordinating group who could facilitate their work with all other partners. Because this group is characterized as having too few partners with limited access and capacity to work with more, a low level of internal coordination, and a high interdependence on partnerships, this group was deemed *partner deficit, limited capacity*.

Members of cluster 3 (n=210; 38%) differentiated themselves from the other clusters by indicating having too few projects for their partners to handle. Further, they indicated having the right amount of partners to meet the work they need to accomplish and having adequate time to both work with the partners they already have and solicit new partners. Interestingly, members of Cluster 3 indicated not potentially benefiting from one coordinating group who could facilitate their work with partners, and displayed only moderate interest in working with organizations that bring more resources and skills to the table. Therefore, this group was characterized as having the right amount of partners and time to accomplish tasks, maintain relationships, and displays a high level of internal coordination and independence. Thus, this cluster was labeled *partner equilibrium/optimal capacity*.

Table 32: Mean Differences between Clusters in Partnership Approach (FK)

		μ(*SD*)[1]			*F*	*p*
Category	**Q29 items**	**Partner Surplus/Moderate Capacity (n=192)**	**Partner Deficit/Limited Capacity (n=158)**	**Partner Equilibrium/ Optimal Capacity (n=210)**		
Partnership Ratio						
	More projects to do than current partners can handle.	0.76(0.95)[a]	0.99(0.71)[a]	-0.30(0.74)[b]	139.57	<.00
	Not enough partners to meet the work we need to accomplish.	-0.09(0.93)[a]	0.77(0.74)[b]	-0.43(0.69)[c]	106.31	<.00
	Right amount of partners to match the projects.	-0.43(0.80)[a]	-0.37(0.74)[a]	0.43(0.69)[b]	79.08	<.00
Time						
	More partners than time to work with them.	1.12(0.80)[a]	-0.47(0.86)[b]	-0.28(0.77)[b]	216.31	<.00
	Only enough time to work with a select handful.	1.06(0.65)[a]	0.41(0.98)[b]	0.16(0.83)[c]	63.05	<.00
	Access too many potential partners, but don't have time to solicit.	1.00(0.71)[a]	0.16(0.90)[b]	-0.16(0.74)[c]	115.80	<.00
Importance & Preference						
	Many partners who want to do projects of low priority.	0.83(0.78)[a]	-0.16(0.76)[b]	-0.14(0.75)[b]	104.62	<.00
	Access too many potential partners, but prefer to use a select few.	0.06(0.97)[a]	-0.44(0.79)[b]	-0.28(0.80)[b]	15.66	<.00
Readiness & Assistance						
	Don't have projects ready when partners are ready.	1.13(0.71)[a]	0.44(0.89)[b]	0.25(0.82)[b]	64.31	<.00

		μ(SD)			*F*	*p*
Category	**Q29 Items**	**Partner Surplus/Moderate Capacity (n=192)**	**Partner Deficit/Limited Capacity (n=158)**	**Partner Equilibrium/ Optimal Capacity (n=210)**		
Historic Use	Benefit from one coordinating group who could facilitate work.	0.46(1.17)[a]	0.66(0.94)[a]	-0.50(0.85)[b]	75.54	<.00
	Not working with volunteers as much as we did in the past.	0.14(1.08)[a]	0.09(1.04)[a]	-0.29(0.86)[b]	10.88	<.00
	Always had partners; tactics haven't changed.	-0.15(0.93)[a]	-0.04(0.85)[ab]	0.13(0.82)[b]	5.14	<.00
Type Preference	Become strategic about the partners with whom we work.	0.47(0.90)[a]	0.32(0.74)[a]	0.36(0.72)[a]	1.92	.15
	More efficient to work with organizations who bring more resources and skills to the table than individual volunteers.	0.77(1.00)[a]	0.66(0.84)[a]	0.20(0.88)[b]	22.61	<.00

[1]Subscipts that differ are significant @ p<.03. Scale from -2(Strongly Disagree) to 2(Strongly Agree), with items preceded by lead-in statement: "To what extent do you agree with the following statements about your administrative unit's partnership approach?"

Exploring External Environment and Coded Support Variable between Clusters

Chi-square test of independence revealed members within the segmented clusters differed significantly in how they described the setting or external environment of their administrative unit in terms of human population ((χ^2 (8, N=519) = 17.30, p=.02); Table 33). Inspection of the frequency distribution for cluster membership, given external environment, revealed members of *partner surplus/moderate capacity* (32%) were more likely to describe their setting as large metro than those in *partner deficit/limited capacity* (16%) or *partner equilibrium/optimal capacity* clusters (19%). Indeed, the probability for members of the *partner surplus/moderate capacity* cluster describing their external environment as large metro was 2.29 times (.32/.16) more likely than those in the *partner deficit/limited capacity* cluster, and 1.68 (.32/.19) more likely than those in the *partner equilibrium/optimal capacity* cluster. In general, members of *partner deficit/limited capacity* (28.7%) and *partner equilibrium/optimal capacity* (27.8%) were less likely to indicate either large or small metro when compared to *partner surplus/moderate capacity* (40%), and more likely to describe their environment as either dense or remote rural (52.7%, 57.5%, and 42.8% respectively).

A second Chi-square test of independence revealed the percentage of overall support received within each cluster differed significantly ((χ^2 (8, N=4) = 25.27, p<.00); Table 34). Evaluation of the frequently distributions indicated respondents in *partner surplus/moderate capacity* and *partner deficit/limited capacity* clusters as having less overall support than those in *partner equilibrium/optimal capacity*. In addition, respondents in the *partner equilibrium/optimal capacity* cluster were more likely to be coded as having a considerable amount of internal support than those in the *partner surplus/moderate capacity* or *partner deficit/limited capacity* clusters (29.5% versus 13% and 18.4% respectively).

Table 33: Cluster Differences on External Environment (FK)

	Partner Surplus/ Moderate Capacity	Partner Deficit/ Limited Capacity	Partner Equilibrium/ Optimal Capacity		
n	**192**	**158**	**210**	χ^2	*p*
		n (Percent)			
External Environment				17.30	.02
Large Metro	56 (32.0)	24 (16.4)	38 (19.2)		
Small Metro	14 (8.0)	18 (12.3)	17 (8.6)		
Amenity	30 (17.1)	27 (18.5)	29 (14.6)		
Dense Rural	16 (9.1)	19 (13.0)	29 (14.6)		
Remote Rural	59 (33.7)	58 (39.7)	85 (42.9)		

Table 34: Cluster Differences On Coded Support Variable (FK

	Partner Surplus/ Moderate Capacity	Partner Deficit/ Limited Capacity	Partner Equilibrium/ Optimal Capacity		
n	**192**	**158**	**210**	χ^2	*p*
		n (Percent)			
Coded Support Variable				25.27	<.00
Minimal	126 (65.6)	97 (61.4)	92 (43.8)		
Moderate	41 (21.4)	32 (20.3)	56 (26.7)		
Considerable	25 (13.0)	29 (18.4)	62 (29.5)		

Exploring Partnership Types between Clusters

ANOVA results indicated three statistically significant differences between the segmented clusters and the extent to which each worked with different types of volunteer or partner groups (Table 35). Significant differences were found between the extent to which members of the three clusters worked with: groups or individuals involved in long-term collaborations (F (2,471) =6.62, p<.01); groups that provide ongoing assistance (F (2,471) =4.62, p<.01); and, groups that provide other types of project work (F (2,471) =6.34, p<.01). Post hoc analysis revealed respondents belonging to the *partner equilibrium/optimal capacity* cluster less frequently (μ=2.74, *SD*=1.17) worked with groups or individuals involved in long-term collaborations than those in the *partner surplus/moderate capacity* cluster (μ=3.21, *SD*=1.26). Respondents placed in the *partner surplus/moderate capacity cluster* more frequently (μ=3.61, *SD*=1.22) worked with groups that provided an ongoing assistance that those in the *partner equilibrium/optimal capacity* cluster (μ=3.22, *SD*=1.16). Finally, those in the *partner equilibrium/optimal capacity* cluster less frequently (μ=2.32), *SD*=1.21) worked with groups that provided other types of project work than those in the *partner surplus/moderate capacity* cluster (μ=2.77, *SD*=1.28).

No differences were found among the clusters for remaining types of volunteer or partner groups: groups who show up one time for specific projects or events (F (2,471) =3.16, p=0.04); groups who show up periodically as needs arise (F (2,471) =1.70, p=0.18); and, those involved in annual or periodic events (F (2,471) =0.61, p=0.55).

Table 35: Mean Cluster Differences on Types of Partners (FK)

	μ (*SD*)[1]			
	Partner Surplus/ Moderate Capacity (n=192)	**Partner Deficit/ Limited Capacity (n=158)**	**Partner Equilibrium/ Optimal Capacity (n=210)**	**Total**
Specific projects or events	2.94(1.01)[a]	2.66(0.98)[a]	2.74(0.96)[a]	2.79(0.99)
As needed	2.99(0.99)[a]	2.77(1.08)[a]	2.96(1.14)[a]	2.92(1.07)
Annual or periodic events	2.94(1.07)[a]	2.90(1.01)[a]	2.82(1.08)[a]	2.88(1.06)
Long-term collaborations	3.21(1.26)[a]	2.86(1.25)[ab]	2.74(1.17)[b]	2.93(1.24)
Ongoing assistance	3.61(1.22)[a]	3.39(1.14)[ab]	3.22(1.16)[b]	3.40(1.19)
Other types of work	2.77(1.28)[a]	2.38(1.18)[ab]	2.32(1.21)[b]	2.49(0.24)

[1]Subscipts that differ are significant @ $p<.02$. Scale from 1 (Never) to 5 (A Great Deal), with items preceded by lead-in statement: "To what extent to you typically work with the following types of volunteers or partner groups?"

Exploring Administrative Reliance between Clusters

ANOVA results revealed significant differences between partnership structural types for respondent's responses to three of the perception statements: "Partners are absolutely essential for accomplish critical work" (F (2,500)=1.92, p<.01); "Partners are useful for community outreach and public service, but it is not always the most efficient way to accomplish work" (F (2,498)=10.54, p<.01); and, "An overdependence on partners had diminished the USFS visibility on our forest" (F (2,489) = 11.15, p<.01; Table 36). Post hoc analysis revealed respondents in the *partner equilibrium/optimal capacity* cluster agreed less strongly (μ=0.63, *SD*=1.03) with the statement "Partners are absolutely essential for accomplishing critical work" than those in the *partner deficit/limited capacity* cluster (μ=*1.05, SD*=0.90). Respondents in the *partner surplus/moderate capacity* cluster agreed more strongly (μ=0.72, *SD*= 1.02) with the statement "Partners are useful for community outreach and public service, but it is not always the most efficient way to accomplish work" than respondents in the *partner deficit/limited capacity* cluster (μ=0.25, *SD*=1.07) and the *partner equilibrium/optimal capacity* cluster (μ=0.30, *SD*=0.96). Additionally, respondents in the *partner deficit/limited capacity* (μ= -0.48, *SD*=1.14) and the *partner equilibrium/optimal capacity* cluster held less favorable perceptions (μ= -0.43, *SD*=0.98) about the statement "An overdependence on partners has diminished the USFS visibility on our forest" than those in *partner surplus/moderate capacity* cluster (μ= 0.06, *SD*=1.27).

There were no significant difference between respondents in the three partnership structural types for their responses to the statements: "Partnerships are ideal for projects that are extra or optional, but they are not essential" (F (2,501) =1.67, p=.19); "Partners detract from our ability to achieve our core mission or meet goals" (F (2,501) =1.85, p=0.16); and, "Partnerships are helping our forest strengthen ties with local communities" (F (2,499) =0.96, p=.38).

Table 36: Mean Cluster Differences on Administrative Reliance (FK)

	μ (*SD*)[1]				N
	Partner Surplus/ Moderate Capacity (n=192)	**Partner Deficit/ Limited Capacity (n=158)**	**Partner Equilibrium/ Optimal Capacity (n=210)**	**Total**	
Partners are absolutely essential for accomplishing critical work.	0.92 (1.05)[ab]	1.05 (0.90)[a]	0.63 (1.03)[b]	0.84 (1.01)	503
Partners are ideal for projects that are extra or optional, but they are not essential.	-0.08 (1.12)[a]	-0.21 (1.06)[a]	0.00 (1.02)[a]	-0.09 (1.07)	504
Partners are useful for community outreach and public service, but it is not always the most efficient way to accomplish work.	0.72 (1.02)[a]	0.25 (1.07)[b]	0.30 (0.96)[b]	0.43 (1.03)	501
Partners detract from our ability to achieve our core mission or meet targets.	-0.68 (0.94)[a]	-0.86 (0.84)[a]	-0.71 (0.77)[a]	-0.74 (0.85)	504
An overdependence on partners has diminished the USFS visibility on our forest.	0.06 (1.27)[a]	-0.48 (1.14)[b]	-0.43 (0.98)[b]	-0.29 (1.15)	492
Partnerships are helping our forest strengthen ties with local communities.	0.98 (0.91)[a]	0.97 (0.78)[a]	0.86 (0.82)[a]	0.93 (0.84)	502

[1]Subscripts that differ are significant @ $p<.02$. Scale from -2 (Strongly Disagree) to 2 (Strongly Agree), with items preceded by lead-in statement: "To what extent do you agree with the following statements as they relate to your administrative unit."

Table 37: Summary of Cluster Membership

Cluster	Internal Capacity			Partnership Access	
	Internal Support	Partnership Dependency	Internal Coordination	External Environment	Public Demand
Partner Surplus/ Moderate Capacity	Minimal	High	Moderate	Urban	High
Partner Deficit/ Limited Capacity	Minimal	Moderate	Low	Rural	Moderate
Partner Equilibrium/ Optimal Capacity	Moderate	Low	High	Rural	Moderate

CHAPTER 5 - DISCUSSION

As the partnership phenomenon continues to be espoused by the USFS as an innovative and alternative management strategy, a comprehensive and realistic depiction of the factors that distinguish the USFS capacity to partner is warranted. The purpose of this study was to examine the different structural forms of USFS partnerships by exploring different levels of partnerships reliance and administrative support for partnerships. This included a comprehensive examination of the overall perceptions of partnership performance held by agency personnel at different administrative level and national forests, and the different structural forms and external environments in which these interactions take place. While a lot of partnership studies have focused on overall perceptions of partnership success (e.g., Gray, 1985; Lasker et al., 2001; Mowen & Kerstetter, 2006; Seekamp & Cerveny, 2010; Yaffe & Wondolleck, 2000), researchers of natural resource-based partnerships have yet to examine the differences that exist between individuals working with partners at different administrative levels and within different national forest settings. Therefore, the results of this study provide unique access into agency personnel's perceptions' of these relationships and have several direct implications for forming and fostering future partnerships within the USFS. This chapter includes a summary of the findings for each research objective and includes a discussion of the practical and theoretical implications for each of the five objectives separately.

5.1 Internal Support Networks for USFS Partnerships (Obj. 1)

The first research objective of this study was to examine internal support networks for USFS partnerships and assess if differences existed between administrative levels and between national forests. In earlier qualitative phases of this research, (a) internal commitment was found to be most perceptible where there was high leadership support and (b) the overall capacity to

partner was found to be constrained in cases where internal commitment was lacking (McCreary, 2010). Furthermore, prior research demonstrates that adequate administrative support and internal commitment are key indicators of both increased personnel motivation and overall agency capacity to partner (Andereck, 1997; McCreary, 2010; Seekamp & Cerveny, 2010; Selin & Chavez, 1994; Wondolleck & Yaffe, 2000). Therefore, agency personnel's internal support network was seen as significantly contributing to the agency's overall ability to engage in partnering efforts.

To achieve this objective, respondents were asked to indicate how often they personally received support for their work with partners from a list of ten agency positions. Overall, results indicated USFS employees as having diverse partnership support networks; however, personnel typically received the most support for their work with partners from programmatic, team, and administrative supervisors. Through statistical analysis, several significant differences were noted between reported levels of support and the administrative level or national forest to which respondents belonged. However, examination of the individuals from whom respondents' primarily received the most support was found to be fairly consistent between administrative levels and between national forests.

In general, respondents reported receiving the most support from district rangers, program managers, team leaders, and forest supervisors and the least support from the regional partnership coordinator, the forest partnership coordinator, and the national partnership office. Interestingly, the amount of support received by agency personnel was among the lowest received by all three positions of partnership coordinators and the National Partnership Office. It is important to note that not all administrative levels or forests have designated or assigned partnership coordinators at these levels. Consequently, the results may not depict the true level of

support received as respondents surveyed for this study may have differing partnership coordinating systems (i.e., partnership coordinators assigned to forest zones or individual forest districts) from which they operate (McCreary, 2010).This assumption is consistent with the findings, as reported support received by all three positions of partnership coordinators differed significantly between national forests. However, future research should include an analysis of the types of assistance normally provided by individuals in such support positions, and should assess the feasibility of incorporating additional preparation and professional development activities into the training of USFS employees engaged in partnerships. As noted by McCreary (2010), providing personnel with the tools and knowledge necessary to navigate the partnership process will be essential to the sustained use of partnerships within the USFS. Such training modules are already available through the National Partnership Office; however, employees indicated never to rarely receiving support from the National Partnership Office. Therefore, strategies to increase awareness of this online, comprehensive resource are needed.

Examination of the data by employment level revealed interesting patterns in the amount of support received by agency personnel for their work with partners. Not surprisingly, respondents who reported to the forest supervisor's office consistently reported receiving more support from higher level agency staff (i.e., partnership coordinators, public affairs of public relations staff officers, forest supervisors) than respondents reporting to ranger districts, forest zones or areas, or multiple administrative units. In addition, results confirm that agency personnel working at all administrative levels received the most support for their work with partnerships from district rangers, program managers, or team leaders. As higher level agency staff generally drive the 'push' to partner, this finding suggests that the upper-level administrators' partnership agenda may be being translated to program and district level staff

through second-tier leadership (i.e., district ranger, program manager, or team leaders). However, as this study did not evaluate if personnel require more direct support from higher level agency staff, further examination of agency personnel's support network is warranted.

In addition to evaluating from whom agency personnel personally received support from, a composite variable ,which categorized forests as having minimal, moderate, or considerable support, was created to gage the extent of administrative support present on a national forest. In general, results indicate forests as having differing levels of overall administrative support; however, over two-thirds of the forests used in this study were classified as having minimal or moderate support. As adequate levels of institutional support are closely correlated with the effectiveness and duration of partnerships, these data confirm previous studies' claims that increased levels of administrative support is needed at multiple levels within land management organizations (Andereck, 1997; Lasker et al., 2001; McCreary, 2010; Selin & Chavez, 1994 Wondolleck & Yaffee, 2000).

5.2 Levels of Administrative Reliance for USFS Partnerships (Obj. 2)

The second research objective of this project was to quantify agency personnel's perceived level of administrative reliance for USFS partnerships, and determine if differences exist between administrative levels and between national forests. In addition, several relationship performance metrics were explored in order to offer insights into perceptions held by agency employees regarding how essential or nonessential partners were for accomplishing work, as well as perceptions of the utility of partnerships as a management strategy.

In general, results indicate a steady increase in the reliance of partnerships over the past five years to accomplish critical tasks; however, respondents indicated desiring less frequent reliance than currently reported. Significant differences were found between administrative units

when asked their desired level of reliance, with those reporting to the ranger districts office desiring less reliance on partnerships than those reporting to the forest supervisor's office. Additionally, national forests differed in the extent to which they relied on partnerships five years, but currently report similar current and desired levels of partnership reliance. Further examination of external environment and the coded support variable failed to reveal why differences may exist between national forests.

Although examination of the level of reliance between both administrative levels and between national forests exposed interesting nuances, overall trends suggest partnerships as the norm rather than the exception in meeting critical recreation and resource management tasks. However, the tendency for personnel to desire less frequent partnership reliance may suggest that current levels of partnership work are not sustainable. There are several potential explanations highlighted in previous research as to why personnel may desire less frequent reliance, such as the need for additional time and resources, as well as the substantial effort required to build and maintain these relationships (Lasker et al., 2001; Seekamp & Cerveny, 2010; Weiss et al., 2002).

Even though this analysis does much to quantify levels of administrative reliance, probing deeper into the relationship perceptions provides a richer understanding of the dominant attitudes and sentiments that exist within the study population. Interestingly, USFS employees generally held similar beliefs when statements depicting relationship perceptions were assessed. Although examination of the results revealed some significant differences, mean difference scores suggest little practical significance; therefore, differences between administrative levels and national forests will not be included in the discussion.

Similar to previous stages of this research, partnerships were seen as essential for accomplishing critical work and not just utilized for extra or optional work (McCreary, 2010;

Seekamp & Cerveney, 2010). Partnerships were also viewed as aiding and strengthening ties with local communities. As fostering a greater sense of civic engagement has gained considerable attention over the last decade (Wade, 2005; Wondolleck & Yaffe, 2000), this finding suggests that partnerships could enhance public stewardship and democratic involvement. However, while partnerships may aid in strengthening ties with local communities, USFS personnel generally agree that it is not always the most efficient way to accomplish work. This finding is in concurrence with Seekamp & Cerveney (2010) who found that some partnering efforts with local communities may not lead to project efficiency or enhance the agencies capacity.

Results also indicate USFS employees generally disagreed that partnerships diminished USFS visibility or that partners detracted from the agency's ability to achieve core missions or targets. Caution should be taken when interpreting these results however, as previous research suggest that as the agency becomes increasingly reliant on partners, the agency may experience a loss of internal capacity (i.e., technical knowledge and skills), resulting in a loss of power or control over the process and reduced USFS visibility (e.g., fewer "green" trucks and uniforms) on forests (McCreary, 2010; Seekamp & Cerveny, 2010). Despite some of these concerns, this study's findings confirm the true necessity of partnerships for the agency to accomplish essential work and meet its mission and goals. Although the present study revealed useful antecedents to relationship performance metrics, future studies should include other explanatory variables (e.g., attitudes and value systems) to reveal more meaningful insight.

5.3 Types of Institutional Support and Recognition (Obj. 3)

The third research objective included an examination of the various types of institutional support or recognition agency personnel received for their work with partnerships and assess if differences existed between administrative levels and between national forests.

In general, USFS employees received few internal rewards or recognition for their work with partners; however, personnel at all levels reported receiving direct, positive feedback from the partners and from their immediate supervisor. Several statistical differences were found between administrative levels and the types of institutional support agency personnel received for their work with partners. Although those reporting to the forest supervisor's office were more likely to receive internal publicity and direct positive feedback from their supervisors than those reporting to multiple zones, the practical significance was slight. Consequently, the types of internal support and recognition were found to be somewhat consistent across administrative levels. Further investigation of the data revealed interesting patterns similar to those uncovered when exploring agency personnel's internal support network. That is, respondents who report to lower administrative levels received fewer types of support or recognition for their work with partners than those reporting to upper administrative levels. Although speculative, this relationship could explain why those reporting to lower administrative levels desired less overall reliance on partnerships to accomplish tasks than those reporting to upper administrative levels.

Analysis also revealed several types of institutional support or recognition differed significantly between, at least two, national forests. Interestingly, no significant differences were found between national forests and the extent to which employees received direct positive feedback from their partners or from their immediate supervisors. These results suggest that, because agency personnel are not receiving large amounts of internal incentives or recognition,

direct positive feedback from partners or supervisors—particularly, program managers, team leaders, district rangers, and forest supervisors—is likely the driving force motivating USFS staff to engage in partnerships on national forests.

The level of internal support received was found to influence the type of recognition respondents receive for their work with partners. Specifically, respondents coded as having considerable internal support received more monetary awards, nonmonetary rewards, internal publicity, and additional support staff than those coded as having minimal or moderate internal support. This suggests a correlation between the presence of internal incentives and the level of institutional support. As recognition and internal incentives have been shown to improve performance and motivate staff (Barker, Jensen, & Murphy, 1988; Ramus, 2000), these data exemplify that additional support staff, incentives, and recognition may increase partnership performance and enhance programmatic capacity (Seekamp & Cerveny, 2010; Selin & Chavez, 1994).

5.4 Types of Partners (Obj. 4)

The fourth research objective of this study evaluated different types of partnerships being utilized by agency personnel and assessed if differences existed between administrative levels and between national forests. The term partnership is often used by USFS employees as a broad label to characterize all interactions with groups or individuals with which they are involved, regardless of the type of contract or level of involvement (Mowen & Kerstetter, 2006; Seekamp & Cerveny, 2010). Given the wide range of alliances and diversity of functions performed by partners, it is important to identify the extent to which agency employees with dissimilar internal and external environments are working with different partnership types (Coughlin et al., 1999; Moore & Koontz, 2003). Therefore, delineating between the types of partners with whom agency

personnel interact will enable the agency to become more proficient in choosing partners and designing partnerships that best meet the agencies needs (Selin, 1999).

Overall, agency personnel reported working with multiple types of partnering groups on a fairly regular basis. However, analysis of the data revealed agency personnel most frequently work with groups or individuals that provided ongoing assistance, such as trail work groups, interpretive or educational programs, campground hosts, or concessionaires. This was consistent with findings from earlier phases of this research project, as over half of respondents reported working with private contractors, concessionaires, individual volunteers (including campground hosts), and local non-profit agencies (e.g., environmental groups or "friends-of" groups). As these groups typically help build the agencies capacity to deliver services and complete project tasks, greater attention should be paid in building the effectiveness and efficiency of these relationships.

In general, respondents from different administrative levels typically engaged at the same frequency with groups or individuals who show up periodically as needs arose, for annual or periodic events, and those that provide an ongoing assistance. Many of the activities typically carried out by these types of groups are, not only essential for the agency to accomplish service-related tasks, but also provide opportunities to engage the public in resource management decisions and outcomes. Such relationships have been described previously as joint management bodies (Carlsson & Berkes, 2005), hybrid models (Moore & Koontz, 2003), or strategic alliances (Nielsen, 2002; Todeva & Knoke, 2005), and are being increasingly utilized as the outcomes are mutually beneficial to both the agency and the partnering organizations (McCreary, 2010).

Slight differences existed between the extent to which administrative units worked with groups who show up for specific projects or events, long-term collaborations, and other types of

project work. Respondents reporting to forest zones or areas less often worked with groups who show up one time for a particular event or project than respondents at all other administrative levels. This finding is likely due to scale, in various aspects (geographic, locus of control, organizational diversity and size; Margerum, 2008; McCreary, 2010; Selin, 1999), as forest zones comprise two or more ranger districts that share personnel and can vary considerably in size. In addition, agency personnel reporting to ranger districts less frequently engage in long-term collaborative processes than personnel reporting to hierarchically higher administrative units. As these relationships are among the most formal of partnering interactions and are typically highly structured (Mowen & Kerstetter, 2006), agency personnel reporting to ranger districts likely do not have the time, energy, or resources available to engage these partners to a greater extent. Based on these findings, future research may want to explore these constraint variables as intervening in the extent to which personnel work with different types of volunteer or partner groups.

Interestingly, analysis by national forests revealed that national forests only differ for the extent to which they worked with groups or individuals who show up periodically as needs arise. Further inquiry indicated external environment may explain this difference, as agency personnel who described their administrative unit as large metro were more likely to engage with this group than those describing their administrative unit as remote rural. This finding is quite logical as a forest's geographic location has been found to typify access to volunteers and the type of partnerships forests may encounter (McCreary, 2010). However, although one significant difference was found between national forests, we expected the extent to which national forests engaged in different types of partnerships would be more differentiated as suggested in previous research (Seekamp et al., 2011). Regardless, the findings of this study reveal administrative

levels and external environments influence the use of specific types of partners. As different partners provide different skills and services, these results support previous studies that purport agency personnel may be strategically selecting partnerships based on the types of work typically performed (e.g., collaborative planning, mission critical tasks, or fostering public stewardship; Seekamp et al., 2011), as well as on the access and proximity to different partnering groups (McCreary, 2010). Based on these postulations, these results offer the USFS useful insights of with whom, and how frequently, agency personnel interact with differing partner groups.

5.5 Identifying Partnership Structural Types (Obj. 5)

The fifth research objective of this study identified partnership structures and determined if the institutional support characteristics and external environment characteristics were related to the partnership structures being utilized. A mixed method cluster analysis was performed on fourteen partnership approach items and proved to be a valuable tool in segmenting respondents into three distinct subgroups that differed to a substantial degree in terms of internal capacity and support, partnership dependency and network, external environment, and relationship perceptions. As previous studies have suggested that these aspects greatly influence land management agencies' overall capacity to engage in partnerships (e.g., Andereck, 1997; McCreary, 2010; Seekamp & Cerveny, 2010; Selin, 1999; Selin & Chevez, 1994; Wondolleck & Yaffe, 2000), understanding the key differences between segments of agency personnel will help the USFS enhance partnerships efforts by targeting individual needs and addressing specific barriers.

The three partnership structural types that emerged from the data were named—specifically, *partner surplus/moderate capacity* (34% of sample), *partner deficit/limited capacity* (28% of the sample), and *partner equilibrium/optimal capacity* (38% of the sample)—based on

key characteristics in their partnership approach. In general, members of the *partner surplus/moderate capacity* cluster differentiated themselves as having more projects than current partners could handle, little time to work with or solicit potential partners, and having a surplus of partners who wanted to do projects of low priority. Members of *partner deficit/limited capacity* cluster were characterized as having too few partners to accomplish projects, lacked access to prospective partners, and have little capacity to work with more partners than they currently do. Members of *partner equilibrium/optimal capacity* cluster were notably different from the other two clusters by having the right amount of partners to achieve project and task goals and having adequate time and coordinating systems to manage partners.

Differences were found among the clusters in how they described the setting or external environment of their administrative unit. Generally, members of the *partner surplus/moderate capacity* cluster were more likely to describe their setting as large metro, whereas members of *partner deficit/limited capacity* and *partner equilibrium/optimal capacity* clusters were more likely to describe their environment as either dense or remote rural. Surprisingly, no significant differences were found between the clusters for the extent to which members described their setting as amenity; suggesting the populations in amenity communities may vary considerably. Research is needed to further explore the amenity concept in relation to the volunteer and partner potential. Regardless, the differences found between rural and urban communities confirm that external environment accounts for differences in access to partners and the demand from the pubic to partner (McCreary, 2010). Specifically, McCreary (2010) found that, while urban forests have access to larger pools of potential partners, not all urban forests operate with greater program funding, which can constrain the ability to seek new partners and manage existing partners, despite increased access to potential partners. Additionally, McCreary (2010)

documented that the amount of demand and variety of interests from partners was greater for personnel from urban forests. These distinctions were of urban forests' partnership structures were confirmed here as key characteristics that typify the *partner surplus/moderate capacity* cluster.

Conversely, McCreary (2010) found rural forests with a commodity focus to have limited access to partners and limited program funding for non-commodity programs, which typifies the *partner deficit/limited capacity* cluster. Additionally, McCreary (2010) documented that rural forests with active user group partners tended to view their partnership structure as optimal. The *partner equilibrium/optimal capacity* cluster likely represents these types of forests. However, external environment, despite being an important determinant in classifying partnership structures, is not the sole indicator of partnership structure, as cluster membership spanned all environments.

Segments also differed in overall support received, with respondents in the *partner surplus/moderate capacity* and *partner deficit/limited capacity* clusters receiving less overall support for their work with partners than members of *partner equilibrium/optimal capacity*. This finding was expected, as internal leadership and administrative support are closely associated with the effectiveness and duration of partnerships (Andereck, 1997; Lasker et al, 2001; Lasker & Weiss, 2003; Mower & Kerstetter, 2006; McCreary, 2010; Selin & Chavez, 1994; Wondolleck & Yaffee, 2000; Weiss et al., 2002). That is, individuals with increased leadership support (i.e., members of the *partner equilibrium/optimal capacity* cluster) were more likely to be able to maintain partner relationships and display high levels of internal coordination and independence than those with minimal support (i.e., members of the *partner surplus/moderate capacity* and *partner deficit/limited capacity* clusters). Although speculative, the high level of overall support

received by members of the *partner equilibrium/optimal capacity* cluster is likely the distinguishing factor that supercedes the inherent multifaceted nature of external environment. This finding solidifies that, while external environment may limit partnerships in some instance, high levels of institutional support enhance the agency's overall capacity to partner.

The groups also differed in the extent to which they worked with various types of partner groups. Generally, members of *partner surplus/moderate capacity* more often worked with groups involved in long-term collaborations or groups that provided an ongoing assistance than those in the *partner equilibrium/optimal capacity* cluster. As both of these types of partners require considerable time and effort, these results could explain the key differences found between the clusters and their partnership approach characteristics. While the results aren't completely clear, the high demand to partner that characterized the urban environment of the *partner surplus/moderate capacity* cluster may account for why members of this group work more frequently with groups involved in long-term collaborations or those that provide ongoing assistance, thus, explaining the lack of time and surplus of partners that typified this group. Interestingly, no differences were found between the clusters and the extent to which they worked with groups or individuals who show up one time for particular events or projects, those who show up periodically as needs arise, or those involved in annual or periodic events. This suggests that agency personnel are engaged at the same frequency with these types of partners regardless of access to partners, the level of internal coordination, or the level of dependence on partnerships. As previously mentioned, these types of partner groups typically perform mission critical tasks while providing opportunities to engage the public and foster a greater public stewardship ethic. Therefore, this study demonstrates that agency personnel partner with these

groups out of necessity or duty, as access to partners or level of internal coordination or dependence did not influence the extent to which agency personnel worked with these groups.

Differences were also found between the clusters for some of the respondents' perceptions regarding relationship performance. Although respondents in the *partnership equilibrium/optimal capacity* cluster agreed less strongly that partners were absolutely essential for accomplish critical work than respondents in the *partner deficit/limited capacity* cluster, the differences do not appear substantial. Moreover, respondents in the three clusters held similar perceptions regarding partners' ability to strengthen ties with local communities or partners' ability to achieve core missions or meet targets. However, respondents in the *partner deficit/limited capacity* and *partner equilibrium/optimal capacity* clusters were less likely to agree that partners were not always the most efficient way to accomplish work than those in *partner surplus/moderate capacity* cluster. In addition, respondents in the *partner surplus/moderate capacity* cluster were more likely to agree that an overdependence on partners had diminished the USFS visibility on our forests. Although speculative, it is likely that these differences are due to the high demand to partner and the variety of partnership groups that characterize personnel in the *partner surplus/moderate capacity* cluster. That is, agency personnel are constrained by numerous partner demands and may not have the time to properly train partners or maintain relationships, thus, leading to project inefficiency and reduced visibility (Seekamp & Cerveny, 2010).

These results clearly illustrate distinct segmentation of partnership structural types and reveal unique characteristics between cluster types. Specifically, our results suggest that internal support and, to a lesser degree, external environment are correlated with the partnership structure being used. In addition, the results also indicate that, on average, two segments of partnership

structures lacked adequate resources or internal capacity to manage partnerships. Therefore, it is important for the agency to recognize the growing need to devote adequate institutional resources to partnership management—particularly as partnership reliance intensifies—and the inherent external characteristics that may inhibit a forest's ability to engage specific types of partners (Seekamp & Cerveny, 2010). As this study's data were only collected from one side of the partner dyad, future study should include partners' perspectives so that comparisons could be made when perceptions differed among forest personnel. By gaining information from both sides of the relationship, a more accurate measure of some of the relational interactions might be obtained.

These findings could be a useful tool in creating partnership profiles and prescribing management guidelines for future agency partnerships. Rather than a "one size fits all" partnership approach, such a tool could facilitate strategic partnership development programs that best utilize the capacity constraints found on a national forest and within its various administrative units. For example, because members of the *partner surplus/moderate capacity* cluster indicated having considerably more partners than time to work with, future partnership strategies should focus on utilizing external entities (i.e., bridging or umbrella organizations; McCreary, 2010) that could help organize groups and plan projects. Such practice would help alleviate personnel time constraints and more efficiently coordinate project tasks among multiple partner groups, thus, enhancing partnership success. Furthermore, utilizing such approach would allow partnership practitioners to assess partnership performance at multiple levels and allow the agency to track and reward partnership successes more efficiently.

CHAPTER 6 – SUMMARY AND CONCLUSION

This study sought to improve the knowledge of current partnership conditions within the USFS in hopes of cultivating a vibrant partnership culture. Specifically, this analysis explored overall perceptions of administrative support and partnership performance held by agency personnel at different administrative levels and on different national forests. Furthermore, it analytically tested which institutional factors effectively discriminate between different partnership approaches, and provides evidence that three distinct partnership structural types exist within the USFS. As few systematic empirical partnership assessments have been conducted, the findings of this study make a useful contribution to the literature and the structure of partnership relations and partnership capacity within the USFS. This chapter provides a summary of the study's objectives and methodology, offers concluding thoughts and management implications for each research objective, and presents research limitations.

6.1 Summary of Research Objectives and Methodology

In an era of reduced appropriations and increasingly complex social and environmental challenges, partnerships have become an essential tool for USFS employees to accomplish critical tasks, meet management goals, and enhance service delivery. Despite the growing practice and reliance of partnerships by agency personnel, few systematic examinations of this management approach have been pursued. Thus, this study was driven by the need to analytically evaluate the agency's capacity to engage and support partnerships at multiple administrative levels and on different national forests. Specifically, the goals were to explore the institutional characteristics necessary to foster a vibrant partnership culture, to uncover and document the various partnership structural types being utilized, and to determine whether or not the

institutional characteristics or external environment characteristics affected the partnership structural type being utilized.

In order to explore these partnership characteristics, an online questionnaire was administered to agency personnel on 13 randomly selected forests that assessed agency perceptions of the partnership structure on their forest unit, their access to volunteers (external environment), levels of internal commitment, and overall reliance on partners to accomplish tasks. By using various statistical analyses, research objectives were explored, and differences were assessed between administrative levels and between national forests.

6.2 Key Findings and Implications

The findings associated with this study clearly document partnerships as a critical management strategy to increase capacity to meet the agency's mission. However, this study also highlights that partnerships are more than just a way of leveraging funds and meetings targets; partnerships are a means by which the USFS fulfills and expands its public service mission. As the reliance on partnerships continues to grow to meet national forests' social, economic, and ecological demands, the agency may need to adapt and approach partnering efforts differently than they have in the past. As such, a clear understanding of the influences of diverse partnership characteristics (institutional support and external environments) is necessary to construct a supportive and vibrant partnership culture within the agency.

Institutional Support

Although previous research has found administrative support and internal commitment as indicative to the agency's overall capacity to partner (Andereck, 1997; McCreary, 2010; Seekamp & Cerveny, 2010), this study is one of the few to systematically evaluate the level of institutional support received by agency personnel and assess if differences existed between

administrative levels and between national forests. Aside from revealing similar and consistent partnership support networks across administrative levels and across national forests, this study exposed from whom agency personnel received support and how frequently they received such support. That is, agency personnel typically received the most support for their work with partners from programmatic, team, and administrative supervisors and the least support from different levels of partnership coordinators and the national partnership office. However, discrepancies were found between administrative levels and the types of institutional support agency personnel received, illustrating that perceptions of institutional support differ between administrative units. For example, respondents who reported to the forest supervisor's office consistently reported receiving more support from higher level agency staff (i.e., partnership coordinators, public affairs of public relations staff officers, forest supervisors) than all other administrative units. As adequate levels of institutional support are closely correlated with the effectiveness and duration of partnerships, these findings suggest that further partnership building efforts may be most effective if directed at program and district level staff. Thus, our findings substantiate claims that increased levels of administrative support, particularly from higher administrative staff, are needed in order enhance partnership capacity (Absher, 2009; Andereck, 1997; Lasker et al., 2001; McCreary, 2010; Selin & Chavez, 1994; Seekamp & Cerveney, 2010).

Levels of Administrative Reliance for USFS Partnerships

The results of this study clearly document how reliant the agency has become on partners to achieve goals and complete tasks. To illustrate, the majority of respondents believed partners to be absolutely essential for accomplishing critical work and as helping the USFS to achieve its core mission and accomplish tasks. Moreover, respondents strongly believed partnerships as

aiding and strengthening ties with local communities, which may be enhancing public stewardship and democratic involvement. However, while the results indicated a steady increase in the use of partnerships over the past five years, personnel generally indicated desiring less frequent reliance. Furthermore, personnel generally agreed that partners were not always the most efficient way to accomplish work. As evidenced by such paradoxes, these results suggest that the current level of reliance on partners within the agency may not be sustainable and that some relationships may not enhance the agency's capacity to deliver recreational and resource services.

Types of Institutional Support and Recognition

Study findings clearly indicate that additional types of institutional support, support staff, incentives, and recognition are needed in order to strengthen agency–partner interactions. While this finding is consistent with previous research (McCreary, 2010; Selin & Chavez, 1993; Selin & Chavez, 1994; Wondolleck & Yaffe, 2000), there were several significant insights that contribute to the agency's understanding of partnership operations within different administrative levels. For example, the overwhelming majority of USFS employees reported receiving few internal incentives such as monetary awards, internal recognition or publicity, or additional support staff. However, respondents indicated receiving a considerable amount of direct, positive feedback from partners and from their immediate supervisors. As respondents are not receiving large amounts of internal incentives or recognition, direct feedback is likely the driving force motivating USFS staff to engage in partnerships. In addition, results suggest that institutional commitment and support is indicative to the presence of internal incentives. That is, the level of internal support was found to influence the type and amount of support or recognition respondents received for their work with partners. One of the most straightforward

administrative measures that the agency could undertake would be to establish a formalized reward and recognition system within the agency. These administrative measures could demonstrate the agency's commitment to partners, motivating staff and improving partner relations and programmatic capacity.

Types of Partners

Partnerships exist in many forms and perform a diversity of functions (Seekamp et al., 2011). Exploring with whom and the frequency to which agency personnel interact with each different partnering group fosters a deeper understanding of the partner typologies present within the USFS. This study confirms that agency personnel work with multiple types of volunteer or partnering groups on a fairly regular basis. Furthermore, the results illustrate that there are considerable variations between respondents for the extent to which they employ certain partner types. For example, respondents reporting to ranger districts less frequently engaged in long-term collaborative processes than all other administrative units. Moreover, external environment was found to influence the use of specific types of partners between national forests. That is, a forest's physical proximity to partnering groups influences the type and amount (i.e., demand) of partners to which agency personnel may have access. As different partners provide different skills and services, these results suggest agency personnel should, and in some cases are, strategically selecting partnerships based on the types of work typically performed, as well as on the access and proximity to different partnering groups (Seekamp et al., 2011).

Identifying Partnership Structural Types

By using a mixed-method cluster approach, this study demonstrated that it is possible to effectively segment agency personnel into distinct subgroups based on respondents' partnership approach. Furthermore, the three partnership structural types that emerged were found to differ

substantially in terms of internal capacity and support, partnership dependency and network, external environment, and perceptions of relationship performance. Specifically, institutional support appears to most effectively distinguish segments from one another and highly influence respondents' capacity to partner. For example, two segments of partnership structures lacked adequate resource or internal support to manage partnerships, thus, their capacity to effectively work with partners was limited. However, respondents in the third segment received considerable administrative support and were able to efficiently manage and maintain partners.

These results suggest that providing a dedicated level of internal support is a fundamental force in the type of partnership strategy employed, and confirm the importance of adequate institutional resources for partnership management. As specific administrative units become increasingly reliant on partnerships, better partnership strategies that specifically capture the advantages of different partner groups would be useful. Therefore, these results provide the USFS with a deeper understanding of the nature and structure of agency partnerships, and may serve as a conceptual guide for analyzing and critiquing future partnership success.

6.3 Limitations of the Study

In assessing this study's findings, there are several limitations that are important to note in order to give more perspective to the results. First, not every forest or personnel involved in partnerships was included in this study and data were only collected over a single point in time. While efforts were made to randomly select forests to increase the diversity of forest types and the ability to generalize to the national forest system, some of the unique attributes of individual forests and personnel may not be represented within the results.

Another potential limitation of our study was the low response rate. There are two issues related to response rates including response bias and non-response bias (Dillman, 2007). With

response bias, respondents may have cognitively responded in the way they perceived the researcher or the agency would want or in a way that would provide a positive outcome for their organization. This limitation might be especially present in this study as the USFS places considerable emphasis on agency personnel to use partners to achieve management objectives, and respondents may have felt the need to provide the "correct" response. However, certain data (e.g., lower desired than current levels of reliance scores and the infrequent rewards or incentives reported) suggest that response bias may not be of great concern to this study's findings.

Equally possible, non-response bias has the potential to affect survey data by skewing the results from the collected data. For example, agency personnel at different administrative levels—who are simply too busy may not have had the time to respond to the survey—could have had very different responses. Furthermore, as lists of personnel working with partnerships were acquired via contact with agency personnel, the researchers have no way of knowing if comprehensive personnel lists were obtained from each forest district or national forest. The extent to which non-response bias is present in this data could not be assessed given the level of confidentiality offered to study participants through the design of the web survey and data collection procedures (i.e., individuals were not linked to their actual responses). Therefore, it was impossible to identify respondents who did not complete the study and a non-response bias test could not be conducted. However, wave analysis was used and, due to the high degree of similarities found between respondents, the results suggest that the sample was representative of the population and that the findings can be generalizable to the USFS with caution.

A final limitation to this study applies to the statistical analyses performed throughout the course of this study. In terms of comparing administrative levels and the composite support variable, there is some degree of subjectivity in regards to the classification scheme. These

limitations should be taken into consideration, and caution should be exercised when attempting to apply these results to all USFS partnerships. In addition, there was some degree of subjectivity utilizing cluster analysis in identifying partnership structure types within the data. However, several steps were taken to ensure the quality and reliability of these solutions. For example, several different clustering procedures were utilized on the same data and yielded virtually the same results. While perhaps not a limitation, it is worth noting that the variables used in describing the cluster solutions were restricted to questions that were selected by the researchers. Additional variables that could be of interests for future analysis include demographic variables, as well as personnel motivations to partnership and personnel values.

6.4 Concluding Remarks

Despite these limitations, this study yielded several useful and intriguing findings that further the agency's knowledge of USFS partnership interactions. Specifically, the information produced by this research identified and exposed the consistent institutional characteristics (e.g., administrative support and presence of incentives) necessary to construct and support a vibrant partnership culture within the agency and documented the variety of partnership types and structures utilized by agency personnel. As partnerships continue to be espoused as an innovative and alternative management strategy, this research contributes greatly to the established partnership knowledge base and helps build the foundation for managing national forests through partnerships to meet the growing social, economic, and ecological demands.

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APPENDICES

Appendix A

Forest Supervisor Phone Script & Verbal Consent Form

May I please speak with XXXX.

My name is Lori Barrow and I am a graduate student in Illinois-Carbondale. I am calling in regards to a joint venture research project on agency partnerships. The project is funded by the research and development (R&D) section of the USDA Forest Service, and is a collaborative effort between Southern Illinois University-Carbondale and the USDA Pacific Northwest Research Station. This purpose of our study is to better understand the structure of agency partnerships. Ultimately, it is our hope that results further assist agency personnel when managing national forests through partnerships.

For my thesis research, I am conducting a survey with agency personnel on twelve national forests. Out of the 155 national forests, yours was one randomly selected to participate in this research. We are interested in understanding how personnel on your forest work with partners, and the benefits and challenges of partnerships. However, we do not want to move forward with this study without your consent. The survey will take about 15 minutes of your staff's time. Would you be interested in having the [insert forest name] participate in this research?

I. If response is "NO":

    a. "Thank you for your time. I will not contact you again about this study."

II. If response is "YES":

    a. "Great. I will email you a research project overview after this phone call. Please review it and email me with any questions you may have regarding the project.

It is our hope that with your support we can achieve a high response rate for this project. The research itself will comprise of an internet survey with various questions regarding agency personnel's work with partnerships. Again, the survey itself shouldn't take much longer than 15 minutes.

We would greatly appreciate if you could identify and email us with a list of any individuals who currently work with partners within the Supervisor's Office. This can included program managers, partnership or volunteer coordinators as well as individuals who work with non-profit organizations or foundations. In addition to that list, we will be calling each district ranger in order to compile an e-mail list of personnel members within each district. If you have the time, it would be helpful if you could let your district foresters know we will be contacting them in the

next few days. We hope to be contacting your staff via email in early October with a link to the survey. Thank you for your support and have a nice day."

Appendix B

Study Overview

Institutional Mechanisms of Forest Service Partnerships

In a joint venture between the University of Southern Illinois-Carbondale and the USDA Pacific Northwest Research Station, researchers have developed a conceptual framework for recreational partnerships within the USDA Forest Service. This framework will serve as a guide for entering into and facilitating partnerships for agency personnel.

Currently, we are administering a national survey to gain insight into existing agency partnerships from a random sample of twelve national forests. Specifically, we are interested in documented the variety of ways in which agency personnel at multiple administrative levels use partnerships, as well as the motivating factors for agency personnel to engage (or not engage) in partnerships. The goal of this research project is to document the institutional characteristics that foster a thriving partnership culture.

Key themes of this survey will include:

- Background information
    - Personnel's position title, years of service, work with partners, etc.
- Experience working with partners
    - Personnel's history working with partners
- Forest–community linkages
    - Personnel's perception of public engagement in their area
- Partnership network
    - The types of partners with whom personnel work
- Partnership reliance
    - How personnel and forest unit's approach partnerships
- Partnering motivations
    - What motivates agency personnel to form and maintain partnerships

The survey will be administered in October 2011 to personnel who work with partner on the selected national forests. Completion of the survey takes about 20 minutes for personnel actively engaged in partnerships and about 10 minutes for personnel not engaged in partnerships. All responses will be confidential and results of the study will be used in my master's thesis, disseminated to participating forests in a two-page briefing report, provided to the National Partnership Office, and published in a peer-reviewed professional journal.

For any further questions, please contact Lori Barrow, graduate student in the Department of Forestry, at 618-309-5712 or lb463a@siu.edu, or her project supervisors, Dr. Erin Seekamp at 618-453-7463 or eseekamp@siu.edu, and Dr. Lee Cerveny at 206-732-7832 or lcerveny@fs.fed.us.

Thank you for your time,

Lori Barrow

Research Assistant

Appendix C

District Ranger Phone Script & Verbal Consent Form

May I please speak with XXXX.

My name is Lori Barrow and I am a graduate student in Illinois-Carbondale. I am calling in regards to a joint venture research project on agency partnerships. The project is funded by the research and development (R&D) section of the USDA Forest Service, and is a collaborative effort between Southern Illinois University-Carbondale and the USDA Pacific Northwest Research Station. This purpose of our study is to better understand the structure of agency partnerships. Ultimately, it is our hope that results further assist agency personnel when managing national forests through partnerships.

For my thesis research, I am conducting a survey with agency personnel on twelve national forests. Out of the 155 national forests, your forest was one randomly selected to participate in this research. I have already spoken with your Forest Supervisor, and [insert name] has expressed their support for this project. I hope that you too are interested in supporting this research that assesses how personnel within your district work with partners, and the benefits and challenges of partnerships. The survey will take about 15 minutes to complete.

We are asking each District Ranger on the [insert name] National Forest to supply a list of emails for district staff. Could you provide me with this information?

I. If response is "NO":
    a. "Thank you for your time. Is there anyone else I could try contacting for this information? [If provide name, "Thank you."]. If your Forest Supervisor continues to support this study, all personnel will receive email links to the survey. You should expect an email in October that has a link to the survey."

II. If response is "YES":
    a. "Great. I will email you a research project overview after this phone call. Please review it and email me with any questions you may have regarding the project.

       The research itself will comprise of an internet survey with various questions regarding agency personnel's work with partnerships. Again, the survey itself shouldn't take much longer than 15 minutes.

       We would greatly appreciate it if you could email us with your districts email list. We will contact staff members via email in early October with a link to the survey. It would also be helpful if you could inform your staff that they should be expecting this survey to be emailed to them in October.

Thank you for your support for this research project. Have a nice day."

Appendix D

APPLICATION FOR APPROVAL TO CONDUCT RESEARCH

INVOLVING HUMAN SUBJECTS

SOUTHERN ILLINOIS UNIVERSITY CARBONDALE
HUMAN SUBJECTS COMMITTEE

University and federal policy (e.g., the Department of Health and Human Services regulations for the Protection of Human Subjects Research) require review and approval of **ALL** research activities involving human subjects. This applies to all faculty, staff, and student research, including that to satisfy the requirements of master's and doctoral degrees.

Approval of the Human Subjects Committee (HSC), which is the Institutional Review Board for Southern Illinois University Carbondale, must be obtained **PRIOR** to the involvement of subjects, including pilot studies. Failure to have human subjects research reviewed and approved by the HSC is a violation of University and federal government policy and could result in a loss of grant funding or in a research paper/thesis or dissertation not being accepted by the Graduate School. **The HSC cannot review protocols for projects for which data collection has already begun.**

All proposals submitted will be given a preliminary review within two weeks of the submission date if all necessary information is provided by the researcher. Additional reviews are required for Category II and Category III proposals.

Attached to this cover sheet are the following forms:

Form A:	Approval Page	Form C:	For Category I Review
Form B:	Screening Questions	Form D:	For Category II or III Review

SUBMISSION PROCEDURES

For **Category I** review, submit one original Form A and a total of three copies of Forms B and **C**.
For **Category II or III** review, submit one original Form A and a total of three copies of Forms B and **D**.

Also attach 3 copies of all materials relating to the research study (e.g., questionnaires, surveys, interview protocols, recruitment scripts, consent forms and/or cover letter). Please include copies of tests that you plan to use that ask sensitive questions of a personal nature, such as illegal behavior, sexual behavior, illness, disease, and disability. These questions typically would be found on personality, attitude, behavior and health inventory and similar tests. Tests that generally do not involve sensitive questions, such as cognitive, vocational, career, speech

and language, and educational tests do not have to be submitted. If the HSC determines that a proposal falls under Category III review, the researcher will be notified of the additional number of copies that are needed.

For further assistance, contact the Human Subjects Committee Secretary at the address below. Application forms and information concerning University policy and other pertinent Federal policies and guidelines related to research involving human subjects are also available on the Internet at the address below.

SIUC Human Subjects Committee
Office of Research Development and Administration
Woody Hall C214
Southern Illinois University Carbondale
Carbondale, IL 62901-4709
Ph. 618-453-4533 Fax 618-453-8038
www.siu.edu/orda/human/

FORM B-1

Please type all information or print neatly, using **black** ink.
STUDY IS PART OF: Thesis ☒ Dissertation ☐ Faculty Research ☐ Other ☐
Undergraduate Project that does not fit the exemptions for course-related projects. See the ~~Guide for Researchers~~ 7.3 for more information ☐ (If project is a student learning experience, the HSC does not review it.)
Will this study be funded by a grant? ☒Yes ☐No If yes, indicate name of funding agency below.

FUNDING AGENCY ~~USDA Forest Service Pacific Northwest Research Station~~

POTENTIAL CONFLICT OF INTEREST: Do any investigators in this research now have, or expect to have during the term of the project, any financial interest in a business entity that could reasonably be expected to bias the activities described in this application, or that could create a perception of bias on the part of the investigators?
NO☒ YES☐ If yes, please describe the business entity and explain the relationship in an attached statement.

PROJECT TITLE Institutional Mechanics for Recreation Partnerships

RESEARCHER'S NAME

Barrow Lori Forestry

Last First
Department

Department of Forestry; SIUC (618) 319-5712

Street **Phone**
Number

~~Carbondale Il 62901 lb463a@siu.edu~~

City State Zip
E-mail Address

CO-RESEARCHER(S) NAME(S) Erin Seekamp & Lee Cerveny

RESEARCH ADVISOR'S SIGNATURE

Please print or type name next to your signature

Foresty (618) 453-7463
8/17/11

DEPARTMENT **PHONE**
DATE

Estimate the following:

☐Average time required for an individual subject's participation. 15 minutes (min/hrs per days/weeks)

☐Number of subjects to be involved in the study. Approximately 1,200

☐Approximate date when research subjects will be contacted. 8/22/2011

(Must be after anticipated approval date; allow at least two weeks following submission of application.)

☐Approximate ending date for involvement of research subjects. 8/22/2012

Will any subject be audio or videotaped? ☐Yes ☒No

(If yes, see page 9 for special requirements.)

Are you planning to solicit subjects for participation ☒Yes ☐No

by email? (If yes, see page 9 for special requirements.)

Will you access subjects' protected health information? ☐Yes ☒No

(If yes, see page 9 for special requirements.)

If you are a graduate student, has your faculty committee ☒Yes ☐No

approved your project's methodology? (If no, please do

not submit your application until they have approved it.)

FORM B-2

SCREENING QUESTIONS

The following questions are designed to help you and the HSC determine the review level category of your project. Please circle the appropriate answer to <u>all</u> questions.

1. Is this research designed to study typical educational practices (e.g., instruction, classroom management)? ☐YES ☒NO

   If so, will the research be conducted in an established educational setting? ☐YES ☐NO

2. Does this research consist <u>solely</u> of giving published/standardized tests, survey or interview procedures, or observation of public behavior? ☒YES ☐NO
3. Will the subjects be anonymous? (i.e., if the investigator receives names of participants on consent forms, involves interviews, or can link a number with a name, one can only guarantee confidentiality.) ☐YES ☒NO
4. If information about subjects is disclosed, including personal characteristics and other information gathered during research, can you ensure that they will not be at risk for damage to their financial standing, employability, or reputation? ☒YES ☐NO
5. Does this research involve the collection or study of existing data, documents, records, pathological or diagnostic specimens where :
   a. their sources are publicly available? ☐YES ☒NO
   b. the data cannot be linked to identifiable subjects? ☐YES ☒NO
6. Does this study involve deception (i.e., withholding from or giving false or misleading information to subjects)? ☐YES ☒NO
7. Will procedures cause any degree of discomfort, harassment, invasion of privacy, risk of physical injury, threaten the dignity, or otherwise potentially harm subjects? ☐YES ☒NO
8. Are subjects from any of the categories listed below?
   a. Minors (less than 18 years of age) ☐YES ☒NO
   b. Prisoners or persons who are under criminal sanctions ☐YES ☒NO
   c. Persons with diminished mental capacity (e.g., mental retardation, neurological, psychiatric, or related disability) ☐YES ☒NO
   d. Persons in a residential program (e.g., hospital, developmental center, group home, etc.) ☐YES ☒NO
   e. Clients of a human service program (e.g., counseling center, clinic, etc.) ☐YES ☒NO

If you answered "yes" to any of the questions 1 through 5 and "no" to all the questions 6 through 8,
complete Form C for Category I review.

If you answered "yes" to any of the questions 6 through 8, complete Form D for Category II or III review.

FORM C — CATEGORY I REVIEW

The following questions pertain to potential risks to subjects.

1. State the purpose of the study.

The purpose of this study is to explore the variety of ways partnerships are used by agency personnel within the USDA Forest Servicec. Additionally, this study will examine what motives personnel to work with partners and what their perceptions are of potential challenges to partners.

Describe your potential subject pool.

Forest Service employees.

3. How will you recruit subjects?

Phone calls will be made to the forest supervisors asking for consent to participate; district foresters will also be contacted to obtain the forest's personnel e-mail list. The respondents will then be contacted via e-mail and asked to participate.

4. Where is the location of the research? (e.g., Lawson 121, subject's home, via mail)

Via e-mail

5. If subjects will not be identified from public sources, will signed approval to recruit subjects, conduct the study, or use existing data be obtained from the designated authority prior to conducting the research? ☒N/A ☐YES ☐NO

6. Is there a pre-existing dual relationship between the researcher and subject (e.g., teacher-student, counselor-client)? ☐YES ☒NO

If "yes," explain the nature of the relationship and how you will arrange to have a third party solicit subjects' participation in your study.

If research will be conducted with students in their classroom or clients in their human service delivery setting, will it require any activity that is not part of the normal class or service delivery? ☒N/A ☐YES ☐NO

Explain

8. Will a consent form or a cover letter be provided to participants? ☒YES

9. If subjects are minors, will parental consent be obtained for participation? ☒N/A

10. Will subjects be told that participation is voluntary and they are free to withdraw at any time? ☒YES

11. Will subjects receive compensation for participating in the research (e.g., money, extra credit toward grades)? ☐YES ☒NO

12. If extra course credit will be given, will students who choose not to participate in the research have alternative opportunities to earn credit? ☒N/A ☐YES ☐NO

13. Will the data be recorded in such a way that the individual subjects cannot be linked to the data? ☒YES ☐NO

14. At the completion of the study, will you destroy or erase any materials (e.g., data

sheets, audio/video tapes) that identify individual subjects? ☐N/A ☒YES ☐NO

15. (Note: This question MUST be completed.) Describe procedures IN DETAIL. Include exactly what will be done with the subjects and what measurements will be taken. Provide 3 copies of any material that will be used during the research study (e.g., recruitment scripts, consent forms, cover letters, questionnaires, interview protocols, surveys, etc.). Each participant **must** be provided with a cover letter or consent form that explains the study. See page 8 for required elements of cover letters and consent forms. (Description may be on separate page, if necessary.)

Prior to implementing research, forest supervisors from twelve randomly selected national forests will be telephoned and asked for consent to have their forest's personnel participate in this study (phone script, Appendix A). If consent is given, forest supervisors will be asked to email a list of individuals who currently work with partners within the Supervisor's Office and asked to let their district foresters know that we will be contacting them. In addition, forest supervisors will be e-mailed a study overview that outlines key themes and provides research contact information (Appendix C). If consent is denied, contact with that forest will cease and a new forest will be randomly selected. Fifty-five district foresters will then be contacted and asked to provide a list of emails for district staff, as well as e-mailed the study overview that outlines key themes and provides research contact information (phone script, Appendix B, study overview, Appendix C). If district foresters cannot provide this list, they will be asked if anyone else within the district could provide the information. Once the forest's email list is provided, agency personnel on those lists will receive an initial email cover letter (Appendix D) that explains the study and asks the individual to participate in the survey. It will state in the cover letter that 1) the survey is voluntary, 2) the approximate time it takes to complete the survey and, 3) that all responses will remain completely confidential. A second e-mail will be sent to agency personnel (Appendix E) with a link that contains the survey (Appendix H). Participants will be asked multiple-choice, ordinal and open ended questions about their involvement (or non-involvement) in recreation partnerships. Reminder emails will be sent to all individuals on the list 7 and 14 days following the email with the link to the survey (Appendix F & G), after which, no further contact will be made. In each e-mail, recipiants will be give the option to "opt out of study," at which time, no further contact will be made. To ensure confidentiality, all data will be reported aggregately, and all responses will be stored on a password-protected computer until study completion at which time the responses will be permanently deleted.

The survey will take about 15 minutes (Appendix H) to complete; however, it will take about 5 minutes for personnel not currently engaged in partnerships, as skip logic will be used for such individuals.

Use the space below to provide an explanation for any of the questions 5-14. Indicate the appropriate question number with the explanation. (Use separate pages, if necessary.)

Appendix E

Forest Service Partnership Survey 2011

1. Forest Service Recreation Partnership Survey

Thank you for taking time to complete this survey.

As an employee of the USDA Forest Service, your participation in this study will help improve the knowledge of current partnership conditions as well as increase the agency's ability to develop successful partnerships.

All data will be confidential; your name and position title will not be reported with your responses. If you have any questions, please feel free to contact me at lb463a@siu.edu.

I thank you again in advance for your invaluable assistance with this project.

Lori Barrow, Graduate Student
Department of Forestry
Southern Illinois University

2. Background

We would like to know a little about you.

1. What is your official position title:

2. How many years have you served in this position? (if less than one year, enter fraction of the year; e.g, 9 months = ".75")

3. How many years have you worked for the Forest Service? (If less than one year, enter the fraction of the year)

4. Please indicate the administrative unit(s) at which you currently work. (select all that apply)

- [ ] Ranger District
- [ ] Forest Zone or Area
- [ ] Forest Supervisor's Office
- [ ] Regional Office
- [ ] State/Private Forestry
- [ ] Other (please specify)

Forest Service Partnership Survey 2011

5. Please name the administrative unit to which the majority of your duties are assigned (e.g., specific forest name or specific district name):

6. Is working with partners written in your formal position description (PD)?

- ◯ Yes
- ◯ No
- ◯ Unsure

7. Do you have an item related to partners in your performance evaluation?

- ◯ Yes
- ◯ No
- ◯ Unsure

8. Is there a performance metric for partnership work in your accomplishment reports?

- ◯ Yes
- ◯ No
- ◯ Unsure

9. Was working with partners an expected part of your current assignment when you began?

- ◯ Yes
- ◯ No
- ◯ Unsure

10. Is this an 'acting' position or detail?

- ◯ Yes
- ◯ No

3. Background

11. Since you are in an acting position or on a detail assignment, is your regular assignment on this forest?

- ◯ Yes
- ◯ No

Forest Service Partnership Survey 2011

4. Background

12. What is the title of your regular position?

13. To which national forest are you typically assigned?

We understand that you may not have served long in your acting or detail position. However, your perceptions of the forest and administrative unit to which you are currently assigned are important! Please answer questions that refer to your "administrative unit" from the perspective of your acting or detail position to the best of your ability. Thanks!

5. Background

14. What is the title of your regular position?

We understand that you may not have served long in your acting or detail position. However, your perceptions of the administrative unit to which you are currently assigned are important! Please answer questions from the perspective of your acting or detail position to the best of your ability. Thanks!

6. Your Experience Working with Partners

In this study, we define partners in the broadest of terms (e.g., volunteers, interagency collaborations, contractors, AmeriCorps and Student Conservation Association interns, outfitters-guides, tribal governments, non-profit organizations, foundations, power companies, etc.)

15. Did you have experience working with partners prior to joining the Forest Service?

- ◯ Yes
- ◯ No

16. Do you currently work with partners?

- ◯ Yes
- ◯ No

7. Your Experience Working with Partners

Forest Service Partnership Survey 2011

17. We are interested in knowing why you don't work with partners (check all that apply).

- [ ] There are few partners available to work with in my district or forest.
- [ ] My work assignment is not conducive to working with partners.
- [ ] Working with partners is not part of my job description.
- [ ] I do not have the flexibility to work with partners.
- [ ] Partnerships are not strongly encouraged in our forest/district.
- [ ] It is not something that I have considered before.
- [ ] I am not interested in working with partners.
- [ ] I don't work with partners because I don't believe in outsourcing government work.
- [ ] Other (please specify)

Even though you do not work with partners, your perceptions of the partnership culture on your national forest are important! Please answer the questions to the best of your ability. Thanks!

8. Your Experience Working with Partners

18. If you had to estimate, what is the total percentage of time you typically spend working with partners in your current position?

- ◯ 1-19%
- ◯ 20-39%
- ◯ 40-59%
- ◯ 60-79%
- ◯ 80-100%

Forest Service Partnership Survey 2011

19. Within which functional area(s) do you work with partners (select all that apply)?

- [ ] Restoration
- [ ] Land Management Planning
- [ ] Inventory & Monitoring
- [ ] Recreation, Wilderness, Heritage
- [ ] Wildlife & Fisheries Habitat Management
- [ ] Grazing Management
- [ ] Forest Products
- [ ] Vegetation & Watershed Management
- [ ] Minerals & Geology Management
- [ ] Landownership Management
- [ ] Law Enforcement
- [ ] Other (please specify)

9. Your Partnership Network

We would like to know more about the partners with whom you work.

Forest Service Partnership Survey 2011

20. We want to know the types of partners you've personally been working with in the past 3 years (or since you started in this position if less than 3 years).

- [ ] Private contractors, concessionaires, permit holders, consultants
- [ ] Individual volunteers (including campground hosts)
- [ ] Government sponsored programs (e.g., Job Corp, YCC, AmeriCorp)
- [ ] Other government agency (county, state, federal)
- [ ] Tribes or native corporations
- [ ] Private, corporate, nonprofit foundations, trusts, or granting institutions
- [ ] National non-profit organizations or environmental groups (e.g., land trust, environmental organizations, trail associations)
- [ ] Local non-profit agencies or groups (e.g., environmental groups, recreation or outing clubs, stewardship or friends-of groups)
- [ ] Neighborhood or homeowner's associations
- [ ] Local or regional corporations (e.g., forest products, utility, ranching)
- [ ] Schools, university, or outdoor education groups (e.g., outdoor leadership, environmental centers)
- [ ] Local civic groups (e.g., Elks, VFW, Kiwanis, Rotary, Chamber, garden club)
- [ ] Religious organizations, youth groups (e.g., scouts), camps, teams
- [ ] Volunteer vacation or eco-tourism groups (e.g., Earth Corp) and student interns (e.g., the SCA)
- [ ] Prisoners, probationers, community service (or other 'conscripted' workers)
- [ ] Historical societies, museums, cultural centers, or interpretive associations
- [ ] Planning meeting participants or watershed group
- [ ] Inter-agency coalition
- [ ] Agency or university researchers
- [ ] Coordinating groups (that facilitate relationships with other partners)
- [ ] Forest Service enterprise team or other similar governmental entity
- [ ] National Forest Foundation

Other (please specify)

Forest Service Partnership Survey 2011

21. To what extent do you typically work with the following types of volunteers or partner groups?

	Never	Rarely	Occasionally	Frequently	A Great Deal
Groups or individuals who show up ONE TIME for a particular event of project (e.g., build a bridge, restoration project)	◯	◯	◯	◯	◯
Groups or individuals who show up periodically as needs arise (e.g., blowdown, fire, etc.)	◯	◯	◯	◯	◯
Groups or individuals involved in annual or periodic events (e.g., fish derby, campground cleanup, trail days)	◯	◯	◯	◯	◯
Groups or individuals involved in a long-term collaborative process (e.g., watershed council or regional planning)	◯	◯	◯	◯	◯
Groups or individuals that provide an ongoing assistance (e.g., trail work groups, interpretive or educational programs, campground hosts, concessionaires, contractors)	◯	◯	◯	◯	◯
Other types of project work	◯	◯	◯	◯	◯

Other (please describe)

10. Partnering Motivations

In this section, we are interested in better understanding what motivates you to work with partners.

Forest Service Partnership Survey 2011

22. Please rate the extent to which you agree or disagree with the following statements.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
When I work with partners, I feel a sense of personal accomplishment.	◯	◯	◯	◯	◯
I work with partners because I believe in public engagement and land stewardship.	◯	◯	◯	◯	◯
I work with partners to further my natural resource conservation efforts.	◯	◯	◯	◯	◯
External influences from outside the agency have prompted me to work with partners.	◯	◯	◯	◯	◯
I like the innovation that comes from working with partners – partners bring new ideas and different perspectives.	◯	◯	◯	◯	◯
I work with partners to build trust and enhance community support of agency decisions.	◯	◯	◯	◯	◯
I work with partners to enhance agency outreach in local communities.	◯	◯	◯	◯	◯
The social connections made through partnerships prompt me to continue or expand my work with partners.	◯	◯	◯	◯	◯
The desire to meet expectations of local community groups has influenced me to work with partners.	◯	◯	◯	◯	◯
The emphasis that forest leaders have placed on partnerships has influenced me to work with partners more.	◯	◯	◯	◯	◯
Partners bring new energy and enthusiasm to my work and daily tasks.	◯	◯	◯	◯	◯
I work with partners only out of sheer necessity to meet targets or complete essential forest tasks and projects.	◯	◯	◯	◯	◯
I work with partners primarily to obtain the synergy (i.e., combination of skills and resources) needed to accomplish specific forest tasks and projects.	◯	◯	◯	◯	◯
I am naturally inclined to work with partners because I am a "people person" who enjoys working with others.	◯	◯	◯	◯	◯
I work with partners to take advantage of opportunities as they arise.	◯	◯	◯	◯	◯
Working with partners is an expected job responsibility.	◯	◯	◯	◯	◯
It is my duty to work with partners because it is an inherent part of our agency's public service mission.	◯	◯	◯	◯	◯

23. If you are motivated by influences outside the agency, please indicate what these external influences are:

Forest Service Partnership Survey 2011

24. If you are motivated to work with partners by other reasons, please specify those here.

11. Partnership Support

We want to know about the support you receive to work with partners.

25. How often do you personally receive support for your work with partners from people in the following agency positions?

	Never	Rarely	Sometimes	Often	Always	Does Not Apply
District Partnership Coordinator	◯	◯	◯	◯	◯	◯
Forest Partnership Coordinator	◯	◯	◯	◯	◯	◯
Regional Partnership Coordinator	◯	◯	◯	◯	◯	◯
Public Affairs or Public Relations Staff Officer	◯	◯	◯	◯	◯	◯
Program Manager	◯	◯	◯	◯	◯	◯
Team Leader	◯	◯	◯	◯	◯	◯
District Ranger	◯	◯	◯	◯	◯	◯
Forest Supervisor	◯	◯	◯	◯	◯	◯
Regional Staff	◯	◯	◯	◯	◯	◯
National Partnership Office (Washington DC)	◯	◯	◯	◯	◯	◯

Other (please specify)

26. To what extent have you received the following types of support or recognition for your work with partners?

	Never	Rarely	Sometimes	Often	Always	Does Not Apply
Monetary awards (internal)	◯	◯	◯	◯	◯	◯
Nonmonetary rewards or recognition (internal)	◯	◯	◯	◯	◯	◯
Internal publicity (accomplishment report, newsletter, briefing)	◯	◯	◯	◯	◯	◯
Community feedback, external award, or recognition	◯	◯	◯	◯	◯	◯
Additional support staff, intern, or other personnel support	◯	◯	◯	◯	◯	◯
Direct positive feedback from partner	◯	◯	◯	◯	◯	◯
Direct positive feedback from your supervisor	◯	◯	◯	◯	◯	◯

Other (please specify)

Forest Service Partnership Survey 2011

12. Partnership Reliance

In this section, we are interested in the extent to which your administrative unit (i.e., forest/zone/district) is reliant upon partnerships to achieve goals and complete tasks.

27. Please indicate the extent to which your administrative unit relies on partners to accomplish tasks.

	Never	Rarely	Occasionally	Frequently	A Great Deal	Unsure	Does Not Apply
Five years ago?	◯	◯	◯	◯	◯	◯	◯
Currently?	◯	◯	◯	◯	◯	◯	◯
Your desired level of reliance?	◯	◯	◯	◯	◯	◯	◯

Additional comments

28. To what extent do you agree with the following statements as they relate to your administrative unit.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Unsure
Partners are absolutely essential for accomplishing critical work.	◯	◯	◯	◯	◯	◯
Partners are ideal for projects that are extra or optional, but they are not essential.	◯	◯	◯	◯	◯	◯
Partners are useful for community outreach and public service, but it is not always the most efficient way to accomplish work.	◯	◯	◯	◯	◯	◯
Partners detract from our ability to achieve our core mission or meet targets.	◯	◯	◯	◯	◯	◯
An over-dependence on partners has diminished the USFS visibility on our forest.	◯	◯	◯	◯	◯	◯
Partnerships are helping our forest strengthen ties with local communities.	◯	◯	◯	◯	◯	◯

Forest Service Partnership Survey 2011

29. To what extent do you agree with the following statements about your administrative unit's partnership approach?

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Unsure
We have more projects to do than our current available partners can handle.	◯	◯	◯	◯	◯	◯
We have more partners than time to work with them.	◯	◯	◯	◯	◯	◯
We have many partners who want to do projects that are of low priority.	◯	◯	◯	◯	◯	◯
We do not have enough partners to meet the work we need to accomplish.	◯	◯	◯	◯	◯	◯
We have the right amount of partners to match the projects we have and are able to manage these relationships.	◯	◯	◯	◯	◯	◯
We only have time to work with a select handful of partners.	◯	◯	◯	◯	◯	◯
We have access to many potential partners, but prefer to use a select few.	◯	◯	◯	◯	◯	◯
We have access to many potential partners, but don't have time to solicit them.	◯	◯	◯	◯	◯	◯
We don't always have projects ready when partners are ready to contribute.	◯	◯	◯	◯	◯	◯
We would benefit if there were one coordinating group who could facilitate our work with all other partners.	◯	◯	◯	◯	◯	◯
We are not working with individual volunteers as much as we did in the past.	◯	◯	◯	◯	◯	◯
We have always had partnerships; our tactics haven't changed.	◯	◯	◯	◯	◯	◯
We have become strategic about the partners with whom we work.	◯	◯	◯	◯	◯	◯
We find it more efficient to work with organized groups who bring more resources and skills to the table than individual volunteers or informal groups.	◯	◯	◯	◯	◯	◯

30. Other comments

13. Leadership Emphasis

We would like to know about your perceptions of the partnership culture within your administrative unit.

Forest Service Partnership Survey 2011

31. To what extent do you agree with the following statements related to partnership emphasis within your administrative unit?

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Unsure
Leadership places a high priority on partnerships.	◯	◯	◯	◯	◯	◯
My administrative unit has the necessary financial resources to work with partners.	◯	◯	◯	◯	◯	◯
Partnerships are welcomed or tolerated by leaders, but they are not viewed as high priority.	◯	◯	◯	◯	◯	◯
Partnerships are viewed as high priority, but it is more rhetoric than reality.	◯	◯	◯	◯	◯	◯
Partnerships are not emphasized and not encouraged by leaders; they are the exception rather than the rule.	◯	◯	◯	◯	◯	◯
Partnerships are strongly encouraged; they are part of our way of doing business.	◯	◯	◯	◯	◯	◯
Partnerships are driven by individual initiative more than a management directive.	◯	◯	◯	◯	◯	◯

Additional comments

14. Forest-Community Linkages

We are interested in your perceptions of public engagement in your area. In this section, we would like you to respond to the administrative unit at which you most frequently interact with partners. If you don't work with partners, please respond to the administrative unit to which the majority of your duties are currently assigned.

32. Which item best describes the setting of your administrative unit in terms of human populations? (Please select one)

◯ Large Metro: within 50 miles of a major metropolitan area (pop. > 500,000)

◯ Small Metro: within 50 miles of a smaller urban area (100,000-500,000 pop.)

◯ Amenity: nearby communities are destinations for retirees, amenity migrants, tele-commuters, seasonal residents and second home owners (recreational properties)

◯ Dense Rural: surrounded by a large number of small towns or cities that are close together and heavily settled

◯ Remote Rural: in a remote area with sparsely populated small towns separated by great distances (20+ miles)

◯ Other (please specify)

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33. How would you characterize the partnership base of your administrative unit? (Please select one)

- ◯ Most of the partners and volunteers in my unit are local (within 50 miles) and live near or adjacent to the forest.
- ◯ We have a mix of local and nonlocal partners who work with our forest.
- ◯ We mostly work with nonlocal groups (from cities more than 50 miles away) or national organizations who value our region.

34. How would you classify the general tendency of nearby residents (within 50 miles) to engage in volunteerism or civic participation related to natural resources or the environment?

- ◯ None
- ◯ Low
- ◯ Modest
- ◯ Strong
- ◯ Very Strong
- ◯ Unsure

35. To what extent do the following statements reflect the types of community engagement specific to your administrative unit?

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Unsure
Residents of nearby communities are actively engaged in issues related to natural resource management and the environment.	◯	◯	◯	◯	◯	◯
There is high participation among nearby communities in public meetings for forest planning and NEPA assessment.	◯	◯	◯	◯	◯	◯
There is high participation of local residents in organized stewardship and restoration groups.	◯	◯	◯	◯	◯	◯
There is a strong core of local volunteers who like to work in our forest.	◯	◯	◯	◯	◯	◯
There is high public demand for partnerships in the communities near my administrative unit.	◯	◯	◯	◯	◯	◯
There are a lot of local user groups and clubs who have a particular interest in ensuring access for their specific activity (e.g., nature photography, OHV, climbers, non-timber forest products).	◯	◯	◯	◯	◯	◯

15. Partnership Concerns

We are interested in better understanding concerns related to partnership work.

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36. Overall, how easy or difficult do you personally find working with partners to be?

- ◯ Very Easy
- ◯ Somewhat Easy
- ◯ Neutral
- ◯ Somewhat Difficult
- ◯ Very Difficult
- ◯ Does Not Apply

37. To what extent do you feel the following are challenges to working with partners or inhibit your use of partners?

	Never	Rarely	Sometimes	Often	Always	Does Not Apply
Administering grants and agreement paperwork within the Forest Service	◯	◯	◯	◯	◯	◯
Maintaining relationships after personnel turnover in the Forest Service or in a partner organization	◯	◯	◯	◯	◯	◯
Dealing with difficult partners or partnerships that are not working well	◯	◯	◯	◯	◯	◯
Loss of knowledge, skills, or abilities within the agency to perform specific tasks	◯	◯	◯	◯	◯	◯
Loss of Forest Service control of decision processes	◯	◯	◯	◯	◯	◯
Lack of reward or incentive to work with partners	◯	◯	◯	◯	◯	◯
Lack of required training (e.g., safety) for partners	◯	◯	◯	◯	◯	◯
Lack of agency resources or finances to bring to the table (can't meet commitments)	◯	◯	◯	◯	◯	◯

Other (please specify)

38. To what extent do you personally face the following barriers?

	Never	Rarely	Sometimes	Often	Always	Does Not Apply
I feel like I don't always have the skills to recruit and maintain partners.	◯	◯	◯	◯	◯	◯
I don't have enough time to recruit and maintain partners.	◯	◯	◯	◯	◯	◯
I don't get enough administrative support to help me manage partnerships.	◯	◯	◯	◯	◯	◯

Other (please specify)

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39. In most cases, the benefits of working with partners outweigh the challenges.

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Neutral
- ◯ Agree
- ◯ Strongly Agree
- ◯ Does Not Apply

40. To what extent do you agree with the following statements?

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Unsure
People in my administrative unit are concerned with the loss of in-house skills, knowledge and expertise from relying too much on partners.	◯	◯	◯	◯	◯	◯
I am concerned that the Forest Service is outsourcing traditional work to external groups.	◯	◯	◯	◯	◯	◯
People in my administrative unit don't really view private sector entities (contractors, concessionaires, special use permittees) as partners because they are primarily motivated by profit.	◯	◯	◯	◯	◯	◯
I approach private sector relationships a bit differently than other partners because they prioritize personal gain over public service.	◯	◯	◯	◯	◯	◯

Additional comments

16. Your Values

This section is for theoretical purposes only. Completing this section will provide data for a graduate student's thesis. Specifically we are interested in exploring the relationship between values and partnering motivations.

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41. Please indicate the importance of the following statements as guiding principles in your life.

	Not at all Important	Somewhat Important	Moderately Important	Important	Extremely Important
Family security, safety for loved ones	◯	◯	◯	◯	◯
Protecting the environment, preserving nature	◯	◯	◯	◯	◯
Honoring parents and elders, showing respect	◯	◯	◯	◯	◯
Social justice, correcting injustice, care for the weak	◯	◯	◯	◯	◯
Self-discipline, self-restraint, resistance to temptation	◯	◯	◯	◯	◯
Unity with nature, fitting into nature	◯	◯	◯	◯	◯
Influential, having an impact on people and events	◯	◯	◯	◯	◯
Respecting the earth, harmony with other species	◯	◯	◯	◯	◯
Equality, equal opportunity for all	◯	◯	◯	◯	◯
Wealth, material possessions, money	◯	◯	◯	◯	◯
Harmony among people	◯	◯	◯	◯	◯
Authority, the right to command	◯	◯	◯	◯	◯

42. Do you have any additional comments you'd like to share about working with partners?

17.

Thank you for taking time to complete this questionnaire.

If you have yet to visit the partnership Resource Center's website, please click on this link to explore its contents: http://www.partnershipresourcecenter.org/

Appendix F

Pre-notice Email

From: Lori Barrow

Subject: Research Request for Upcoming Forest Service Recreation Partnerships Survey

Dear [name],

My name is Lori Barrow and I am a Master's student in the Department of Forestry at Southern Illinois University (SIU). I am working on my thesis research, which is part of a multi-phase research project about agency partnerships. This study is being conducted under the advisement of Dr. Erin Seekamp (Department of Forestry) and Dr. Lee Cerveny (USFS), as a joint venture between SIU and the USDA Forest Service Pacific Northwest Research Station. The project is funded by the research and development (R&D) branch of the USDA Forest Service.

Currently, I am conducting a survey on agency partnerships with twelve randomly selected national forests. Your national forest was chosen with the approval of your forest supervisor who also provided me with your e-mail address. This voluntary survey should take about 15-20 minutes if you actively work with partners and about 10 minutes if you do not work with partners. All responses will remain completely confidential.

I am asking you to assist me with my data collection by completing a short survey that will be sent to you within the next few days from this same email address.

For any further questions, please contact myself or either of my project supervisors, Dr. Erin Seekamp (618-453-7463 or eseekamp@siu.edu) and Dr. Lee Cerveny (206-732-7832 or lcerveny@fs.fed.us).

Thank you in advance for your assistance with this project. Your time and expertise will greatly contribute to my research.

Sincerely,

Lori A. Barrow
Graduate Assistant
Department of Forestry
1205 Lincoln Dr., Mail Code 4411
Southern Illinois University
Carbondale, Illinois 62901
Phone: 618-319-5712
E-mail: lb463a@siu.edu

This project has been reviewed and approved by the SIUC Human Subjects Committee. Questions concerning your rights as a participant in this research may be addressed to the Committee Chairperson, Office of Research Development and Administration, SIUC, Carbondale, IL 62901-4709. Phone (618)453-4533. E-mail: siuhsc@siu.edu

Appendix G

Survey Email

From : Lori Barrow

Subject: Research Request for Forest Service Partnerships Survey

Dear [name],

A few days ago I sent you an email notifying you of my thesis research. Again, my name is Lori Barrow and I am a Master's student in the Department of Forestry at Southern Illinois University Carbondale. My research involves collecting information about agency partnerships from 12 randomly selected national forests. Your forest supervisor or district ranger provided me with your e-mail address.

If you are still willing to help me by participating in this voluntary survey, please click on the following link: [url].

The survey should take about 20 minutes to complete if you currently work with partners and about 10 minutes if you do not. By completing this confidential survey, you will be providing voluntary consent to participate in the study. You will not be asked to provide your name at anytime during the study. All data will be reported aggregately; your name and position title will not be reported with your responses, and all responses will be stored in a password-protected computer until study completion at which time your responses will be permanently deleted.

As an employee of the USDA Forest Service, your participation in this study is important to us. Your responses will help improve the knowledge of current partnership conditions as well as improve the agency's ability to develop successful partnerships. If I do not receive a completed survey from you, I will send reminder emails in 7 and 14 days, after which I will not contact you again regarding this study. If you do not wish to assist in this project, please reply to this e-mail with the message "opt out of study" and I will not contact you again.

For any further questions, please contact myself or either of my project supervisors, Dr. Erin Seekamp at 618-453-7463 or eseekamp@siu.edu, and Dr. Lee Cerveny at 206-732-7832 or lcerveny@fs.fed.us. I thank you again in advance for you assistance with this project.

Sincerely,

Lori A. Barrow
Graduate Assistant
Department of Forestry
1205 Lincoln Dr., Mail Code 4411
Southern Illinois University

Carbondale, Illinois 62901
Phone: 618-319-5712
E-mail: lb463a@siu.edu

This project has been reviewed and approved by the SIUC Human Subjects Committee. Questions concerning your rights as a participant in this research may be addressed to the Committee Chairperson, Office of Research Development and Administration, SIUC, Carbondale, IL 62901-4709. Phone (618)453-4533. E-mail: siuhsc@siu.edu

Appendix H

First Reminder Email

From: Lori Barrow

Subject**:** Research Request for Forest Service Partnerships Survey

Dear,

This is a reminder that you have been selected to participate in a survey on agency partnerships. I am conducting this study as part of my thesis research.

You should have received an email with a link to the survey about a week ago. I realize how busy you are at this time of year and while this survey is entirely voluntary, your feedback and expertise in this matter would be extremely valuable to the project and the USDA Forest Service.

Please follow the link below to complete the survey. If you have already completed the survey, thank you for your assistance.

[Link]

As expressed in the previous email, this survey should about 20 minutes to complete if you currently work with partners and about 10 minutes if you do not. All information will be confidential and only accessible to individuals directly involved in the research. Once research has been completed, all responses will be permanently deleted. Your name and title will never be reported with your responses.

If I do not receive a completed survey from you in the upcoming week, I will contact you once more with a final reminder, after which I will not contact you again regarding this study. If you do not wish to assist in this project, please reply to this e-mail with the message “opt out of study” and I will not contact you again from that point.

For any further questions, please contact myself or either of my project supervisors, Dr. Erin Seekamp at 618-453-7463 or eseekamp@siu.edu, and Dr. Lee Cerveny at 206-732-7832 or lcerveny@fs.fed.us. I thank you again in advance for you assistance with this project.

Sincerely,

Lori A. Barrow
Graduate Assistant
Department of Forestry
1205 Lincoln Dr., Mail Code 4411
Southern Illinois University
Carbondale, Illinois 62901

Phone: 618-319-5712
E-mail: lb463a@siu.edu

This project has been reviewed and approved by the SIUC Human Subjects Committee. Questions concerning your rights as a participant in this research may be addressed to the Committee Chairperson, Office of Research Development and Administration, SIUC, Carbondale, IL 62901-4709. Phone (618)453-4533. E-mail: siuhsc@siu.edu

Appendix I

Final Reminder Email

From: Lori Barrow

Subject**:** Research Request for Forest Service Partnerships Survey

Dear,

This is a **final** reminder that you have been selected to participate in a survey on agency partnerships. I am conducting this study as part of my thesis research and the project is funded by the Forest Service's R&D branch. If you have already completed the survey, I thank you for your assistance.

If you have yet to complete the survey, the data-collecting phase of this project is coming to a close but I would still greatly benefit from your feedback and expertise on this matter.

Please follow the link below to complete the survey.

[Link]

As expressed in the previous email, this survey should take about 20 minutes to complete if you currently work with partners and about 10 minutes if you do not. All information will be confidential and only accessible to individuals directly involved in the research. Participants are free to withdraw at any time during this study. Once research has been completed, all responses will be permanently deleted. Your name and title will never be reported with your responses.

Your participation in this survey is voluntary. I will not contact you again regarding this study, but hope you find time to complete it. I hope to have all survey's completed by [date].

For any further questions, please contact myself or either of my project supervisors, Dr. Erin Seekamp at 618-453-7463 or eseekamp@siu.edu, and Dr. Lee Cerveny at 206-732-7832 or lcerveny@fs.fed.us. I thank you again in advance for you assistance with this project.

Sincerely,

Lori A. Barrow
Graduate Assistant
Department of Forestry
1205 Lincoln Dr., Mail Code 4411
Southern Illinois University
Carbondale, Illinois 62901
Phone: 618-319-5712
E-mail: lb463a@siu.edu

This project has been reviewed and approved by the SIUC Human Subjects Committee. Questions concerning your rights as a participant in this research may be addressed to the Committee Chairperson, Office of Research Development and Administration, SIUC, Carbondale, IL 62901-4709. Phone (618)453-4533. E-mail: siuhsc@siu.edu

Appendix J

Table J.1: Internal Support Network (National Forests)

	μ (SD)[1]											N
Support Provider	**NF 1**	**NF 2**	**NF 3)**	**NF 4**	**NF 5**	**NF 6**	**NF 7**	**NF 8**	**NF 9**	**NF 10**	**NF 11**	**Total**	
	n=27	n=55	n=94	n=62	n=61	n=38	n=69	n=40	n=44	n=55	n=31	n=576	
District Ranger	3.82	3.98	3.30	3.68	3.44	4.00	3.05	3.63	3.38	3.43	3.69	3.52	448
	(1.14)	(1.09)	(1.25)	(1.15)	(1.24)	(0.87)	(1.36)	(1.00)	(1.39)	(1.12)	(0.84)	(1.20)	
Program Manager	3.70	3.53	3.10	3.30	2.64	3.41	3.22	3.50	3.30	3.22	3.48	3.27	420
	(1.30)	(1.27)	(1.12)	(1.28)	(1.46)	(1.30)	(1.28)	(1.22)	(1.42)	(1.05)	(0.99)	(1.27)	
Team Leader	3.33	3.59	3.00	3.06	2.88	3.29	2.77	3.23	3.08	2.88	2.90	3.07	354
	(1.50)	(1.19)	(1.28)	(1.17)	(1.53)	(1.31)	(1.38)	(1.15)	(1.63)	(1.18)	(1.22)	(1.32)	
Forest Supervisor	3.55	3.02	2.65	2.57	2.79	3.44	1.95	2.86	2.87	2.36	2.54	2.69	441
	(1.22)	(1.20)	(1.27)	(1.24)	(1.41)	(1.36)	(0.95)	(1.20)	(1.38)	(1.42)	(1.27)	(1.32)	
Public Affairs/ Staff Officer	2.33	2.70	2.05	2.96	2.39	2.48	2.00	2.60	2.39	1.74	2.24	2.34	422
	(1.20)	(1.09)	(1.10)	(1.26)	(1.34)	(1.41)	(1.09)	(1.22)	(1.32)	(1.00)	(1.17)	(1.22)	
District Partnership Coordinator	2.42	2.96	1.83	2.86	2.48	2.42	1.60	3.08	1.45	1.48	2.00	2.23	287
	(1.24)	(1.53)	(1.12)	(1.57)	(1.50)	(1.58)	(1.06)	(1.58)	(0.89)	(0.85)	(1.51)	(1.43)	
Regional Staff	2.68	2.39	1.92	2.22	2.11	1.90	2.09	2.15	2.19	1.87	2.30	2.13	418
	(1.17)	(1.12)	(1.23)	(1.18)	(1.24)	(1.21)	(1.15)	(1.06)	(1.17)	(1.20)	(1.46)	(1.19)	
Forest Partnership Coordinator	1.92	2.80	2.00	2.33	2.26	2.32	1.41	2.39	1.43	1.53	2.13	2.04	329
	(1.08)	(1.57)	(1.08)	(1.42)	(1.29)	(1.42)	(0.83)	(1.34)	(0.81)	(0.94)	(1.36)	(1.27)	
Regional Partnership Coordinator	2.20	2.19	1.46	1.93	1.76	1.84	1.53	1.75	1.52	1.55	1.86	1.74	369
	(1.15)	(1.15)	(0.83)	(1.22)	(1.09)	(1.17)	(0.93)	(1.08)	(0.87)	(0.93)	(1.01)	(1.04)	
National Partnership Office	1.67	1.59	1.29	1.30	1.86	1.47	1.38	1.45	1.38	1.38	1.33	1.45	396
	(1.02)	(0.96)	(0.73)	(0.63)	(1.18)	(0.96)	(0.82)	(0.93)	(0.85)	(0.83)	(0.64)	(0.87)	

[1]Scale from 1 (Never) to 5 (Always), with items preceded with lead-in statement: "How often do you personally receive support for your work with partners from people in the following agency positions?"

Table J.2: Administrative Reliance (National Forests)

	μ (SD)[1]												N
Support Provider	**NF 1**	**NF 2**	**NF 3**	**NF 4**	**NF 5**	**NF 6**	**NF 7**	**NF 8**	**NF 9**	**NF 10**	**NF 11**	**Total**	
	n=27	n=55	n=94	n=62	n=61	n=38	n=69	n=40	n=44	n=55	n=31	n=576	
Five Years Ago	3.45	3.64	3.95	3.98	3.78	3.28	3.82	3.70	3.92	3.57	3.68	3.75	438
	(0.95)	(0.98)	(0.83)	(0.84)	(1.20)	(1.03)	(0.94)	(0.92)	(0.98)	(0.95)	(0.98)	(0.95)	
Currently	4.38	4.08	4.31	4.33	4.13	3.68	4.34	4.27	4.29	4.21	4.13	4.21	490
	(0.65)	(0.79)	(0.74)	(0.75)	(1.06)	(0.91)	(0.81)	(0.77)	(0.89)	(0.94)	(1.01)	(0.86)	
Desired	4.19	3.66	3.68	4.12	3.89	3.60	3.79	3.72	3.83	3.82	3.89	3.82	432
	(0.77)	(1.01)	(1.01)	(0.78)	(1.10)	(1.00)	(0.93)	(0.85)	(0.89)	(1.05)	(1.03)	(0.96)	

[1]Scale from 1 (Never) to 5 (A Great Deal), with items preceded with lead-in statement: "Please indicate the extent to which your administrative unit relies on partners to accomplish tasks."

Table J.3: Perceptions of Partnership Reliance (National Forests)

	μ (SD)[1]												N
	NF 1	**NF 2**	**NF 3**	**NF 4**	**NF 5**	**NF 6**	**NF 7**	**NF 8**	**NF 9**	**NF 10**	**NF 11**	**Total**	
	n=27	n=55	n=94	n=62	n=61	n=38	n=69	n=40	n=44	n=55	n=31	n=576	
Partners are absolutely essential for accomplishing critical work.	0.88 (1.08)	0.67 (1.03)	1.05 (0.98)	0.93 (0.89)	0.79 (1.02)	0.42 (1.17)	0.75 (0.99)	0.74 (0.94)	0.84 (1.05)	0.98 (1.01)	0.93 (1.17)	0.84 (1.02)	514
Partners are ideal for projects that are extra or optional, but they are not essential.	0.00 (1.22)	-0.21 (0.92)	-0.14 (0.98)	-0.16 (1.13)	0.04 (1.11)	0.28 (1.17)	-0.28 (0.99)	-0.03 (1.11)	0.00 (1.01)	-0.02 (1.29)	-0.17 (0.95)	-0.09 (1.07)	515
Partners are useful for community outreach and public service, but it is not always the most efficient way to accomplish work.	0.21 (1.14)	0.35 (0.93)	0.56 (1.04)	0.36 (1.20)	0.25 (1.00)	0.47 (0.95)	0.23 (0.98)	0.62 (0.76)	0.51 (0.93)	0.63 (1.09)	0.50 (1.14)	0.43 (1.02)	511
Partners detract from our ability to achieve our core mission or meet targets.	-0.78 (0.74)	-0.77 (0.68)	-0.66 (0.86)	-0.80 (0.86)	-0.60 (0.96)	-0.85 (0.83)	-0.63 (0.86)	-0.73 (0.87)	-0.59 (0.87)	-0.96 (0.91)	-0.90 (0.76)	-0.74 (0.84)	516
An overdependence on partners has diminished the USFS visibility on our forest.	-0.38 (1.01)	-0.64 (0.88)	-0.33 (1.15)	-0.20 (1.23)	0.00 (1.21)	-0.81 (0.91)	-0.08 (1.32)	-0.29 (1.01)	0.19 (1.14)	-0.27 (1.20)	-0.59 (1.05)	-0.28 (1.15)	502
Partnerships are helping our forest strengthen ties with local communities.	0.83 (0.78)	0.87 (0.79)	1.04 (0.71)	1.07 (0.94)	0.88 (0.89)	0.69 (0.97)	0.85 (0.74)	0.84 (0.85)	0.67 (0.83)	1.06 (0.98)	1.27 (0.69)	0.93 (0.84)	513

[1]Scale from -2 (Strongly Disagree) to 2 (Strongly Agree), with items preceded by lead-in statement: "To what extent do you agree with the following statements as they relate to your administrative unit."

Table J.4: Internal Recognition (National Forests)

	μ (SD)[1]												N
Recognition	**NF 1**	**NF 2**	**NF 3**	**NF 4**	**NF 5**	**NF 6**	**NF 7**	**NF 8**	**NF 9**	**NF 10**	**NF 11**	**Total**	
	n=27	n=55	n=94	n=62	n=61	n=38	n=69	n=40	n=44	n=55	n=31	n=576	
Monetary awards	2.13	2.13	1.82	1.63	1.45	1.85	1.44	1.73	1.62	1.86	1.56	1.73	461
	(0.97)	(1.04)	(0.92)	(0.87)	(0.78)	(1.03)	(0.79)	(0.90)	(0.78)	(1.08)	(0.80)	(0.93)	
Nonmonetary rewards	2.30	2.48	2.09	1.75	1.76	2.00	1.84	2.14	1.76	2.24	1.81	2.01	463
	(1.11)	(1.15)	(1.03)	(0.96)	(1.03)	(1.02)	(1.04)	(1.00)	(0.86)	(1.07)	(0.92)	(1.04)	
Internal publicity	1.83	2.36	1.88	1.75	1.84	1.96	1.82	2.06	1.50	2.20	1.93	1.93	460
	(1.03)	(0.79)	(0.94)	(0.86)	(1.00)	(1.04)	(1.00)	(0.92)	(0.80)	(1.04)	(0.92)	(0.96)	
Community feedback, external award, or recognition	2.00	2.11	1.80	2.08	2.42	2.00	1.90	2.16	1.66	2.33	2.37	2.06	456
	(1.20)	(1.08)	(1.00)	(0.99)	(1.07)	(1.00)	(1.09)	(1.09)	(0.97)	(1.02)	(1.12)	(1.06)	
Additional support staff, intern, or other personnel support	1.61	2.05	1.81	1.80	1.74	1.93	1.40	1.79	1.38	1.76	1.60	1.72	441
	(0.94)	(1.06)	(1.01)	(1.02)	(1.03)	(1.00)	(0.73)	(0.99)	(0.66)	(0.97)	(0.76)	(0.95)	
Direct positive feedback from partner	3.52	3.64	3.37	3.60	3.50	3.56	3.56	3.37	3.22	3.82	3.52	3.52	468
	(1.05)	(0.92)	(0.96)	(1.21)	(1.13)	(0.89)	(0.98)	(0.85)	(1.18)	(0.95)	(1.25)	(1.03)	
Direct positive feedback from supervisor	3.00	3.47	3.13	3.35	3.29	3.30	3.11	3.24	3.15	3.41	3.52	3.26	469
	(1.32)	(1.28)	(1.04)	(1.10)	(1.22)	(1.03)	(1.25)	(0.85)	(1.20)	(1.12)	(1.16)	(1.14)	

[1]Scale from 1 (Never) to 5 (Always), with items preceded by lead-in statement: "To what extent have you received the following types of support or recognition for your work with partners?"

Table J.5: Partnership Network Extent (National Forests)

	μ (SD)[1]												N
	NF 1	**NF 2**	**NF 3**	**NF 4**	**NF 5**	**NF 6**	**NF 7**	**NF 8**	**NF 9**	**NF 10**	**NF 11**	**Total**	
	n=27	n=55	n=94	n=62	n=61	n=38	n=69	n=40	n=44	n=55	n=31	n=576	
Specific projects or events	2.44	2.71	2.62	3.11	3.00	2.70	2.78	2.89	2.63	2.74	2.70	2.78	487
	(1.08)	(1.02)	(0.85)	(1.18)	(0.97)	(0.99)	(0.94)	(1.06)	(0.97)	(0.99)	(0.78)	(0.99)	
As needed	3.20	2.88	2.97	3.02	3.38	2.89	3.05	2.63	2.69	2.46	2.85	2.92	487
	(1.12)	(0.99)	(1.11)	(1.14)	(1.04)	(1.05)	(1.10)	(0.88)	(1.08)	(0.89)	(1.20)	(1.07)	
Annual or periodic events	2.92	2.71	2.83	3.02	2.88	3.04	3.05	2.92	2.43	2.86	2.93	2.87	487
	(0.95)	(0.96)	(1.04)	(1.14)	(1.04)	(1.02)	(1.05)	(1.15)	(0.98)	(1.16)	(1.07)	(1.06)	
Long-term collaborations	3.00	2.94	3.07	2.70	2.83	2.07	3.08	2.89	2.91	3.14	2.96	2.91	487
	(1.23)	(1.13)	(1.23)	(1.33)	(1.45)	(1.00)	(1.24)	(1.18)	(1.22)	(1.16)	(1.26)	(1.25)	
Ongoing assistance	3.60	3.24	3.31	3.57	3.50	2.67	3.44	3.32	3.23	3.68	3.30	3.38	487
	(1.16)	(1.09)	(1.25)	(1.28)	(1.15)	(1.11)	(1.15)	(1.36)	(1.09)	(1.13)	(1.27)	(1.20)	
Other types of work	2.28	2.59	2.14	2.72	2.73	2.30	2.67	2.58	2.46	2.42	2.19	2.48	487
	(1.21)	(1.24)	(1.19)	(1.35)	(1.33)	(1.17)	(1.22)	(1.31)	(1.12)	(1.20)	(1.11)	(1.24)	

[1]Scale from 1 (Never) to 5 (A Great Deal), with items preceded by lead-in statement: "To what extent to you typically work with the following types of volunteers or partner groups?"

VITA

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