The relationship of teamwork factors to perceived success of inter agency collaboration

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Jones, Leslie William

THE RELATIONSHIP OF TEAMWORK FACTORS TO PERCEIVED SUCCESS OF INTERAGENCY COLLABORATION

The College of William and Mary

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THE RELATIONSHIP OF TEAMWORK FACTORS TO PERCEIVED SUCCESS OF INTERAGENCY COLLABORATION

A Dissertation
Presented to
The Faculty of the School of Education
The College of William and Mary in Virginia

In Partial Fulfillment
Of the Requirements for the Degree
Doctor of Education

by
Leslie W. Jones
December 1986
THE RELATIONSHIP OF TEAMWORK FACTORS TO PERCEIVED SUCCESS OF
INTERAGENCY COLLABORATION

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CHAPTER I
INTRODUCTION

Interagency collaboration is a concept with both administrative and theoretical significance (Whetten, 1982). It has been the bane of political leaders, the nemesis of agency administrators and the ferment of interorganizational research and theory for several decades. United States presidents as well as state governors have endeavored to curtail and streamline governmental agencies and their functions (Ringers, 1977; Rogers & Mulford, 1982b). Agency administrators, while striving to build upon an ever expanding service delivery system and number of agency personnel to deliver the services, have attempted to work cooperatively with other agency administrators. This has been achieved with widely varied levels of success (Rogers & Mulford, 1982a; Rubin & Beckhard, 1972). Research on interorganizational coordination, according to Whetten (1982), began to appear in the 1950s and early 1960s and has continued to be published under varied topics such as interorganizational cooperation (Aiken, Dewar, DiTomaso, Hage & Zietz, 1975; Warren, 1975), interorganizational coordination (Hall & Clark, 1975), interagency cooperation (White & Vlasak, 1974), organizational interdependence (Thompson, 1967), interagency collaboration (Elder, 1982).

Over the past two decades, the number of distinct public service programs has increased and, at the same time, segmented the service delivery systems into specialized programs. Each of these specialized programs is assigned to dif-
ferent agencies based on each agency's mission and purpose (Whetten, 1982). Specialization results in fragmentation. All too frequently, clients are forced to go from agency to agency in order to benefit from such a complex service delivery system (Benson, 1975; Elder, 1982; Whetton, 1982).

According to Rogers & Mulford (1982b), political and economic leaders, agency administrators and researchers have assumed that concerted decision making and cooperative program implementation will lead to more successful results than will independent actions by agencies. However, efforts to improve interorganizational coordination have met with limited success (Kamerman & Kahn, 1976). Lehman (1975) has suggested that clients would receive better services if the primary public service agencies - health, education, social services - were forced to compete for the resources and the clients. Yet, as Koenig (1981) has pointed out, societal values and beliefs (e.g., legitimacy, authority, social services, pluralism) sanction the existing network of governmental agencies. Rogers & Mulford (1982b) discussed this issue further while recognizing the importance of decision making and conflict in the process of interorganizational coordination:

Although there are factors intrinsic to the pluralist philosophy that inhibit interorganizational coordination, there is at the same time a major advantage that could be emphasized but instead is largely unrecognized. Pluralism is based on multiple interests. When planners recognize the presence of groups with different interests, both unique and common values of these groups could be brought into the open and
experts could be assigned to work with these groups in an advocacy role. Competitive pluralism may counter bureaucratic influence by fostering alternative programs and ideas (Cloward and Priven, 1972). The result of these efforts could lead to compromises among competing interests, which in turn might lead to changes in allocative decisions and to conflict resolution (Wenocur, 1976).

In summary, researchers and experts in the area of interorganizational theory have suggested that the approach to the study and expansion of theory in this area should include an analysis of the social system between and among organizations with specific emphasis on the individuals in this social system, their personalities as well as the situational variables; e.g., leadership, decision making (Koenig, 1981; Rogers and Mulford, 1982b; Warren, 1967b).

Justification for the Study

Litigation, legislation and administrative actions in recent years have contributed significantly to an increased need for interagency collaboration in the delivery of services for handicapped children and youth. Most prominent among these actions was the passage and subsequent implementation of Public Law 94-142 (Rogers & Mulford, 1982a). This law, as passed by the United States Congress in 1975, requires state and local governments to provide comprehensive educational services to all handicapped students ages three through twenty-one. Under the law, comprehensive educational services are to be provided free (at no cost to parents) and must include the provision of appropriate special education and related
services (Federal Register, 1977).

Related services are defined as those needed in order for the handicapped student to benefit from the educational program, general as well as special, being provided. These related services cover a broad array of programs which fall within the general mission and goals of most of the human services agencies. For example:

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<th>Related service</th>
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<td>psychiatric treatment</td>
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Therefore, the full-service goal of providing comprehensive educational opportunities to handicapped students has major implications for interagency collaboration (Rogers & Mulford, 1982b). Yet, the implementation of this aspect of P.L. 94-142 is impeded by state and local governance structures, federal regulations which complicate the collaborative process and a broad array of services for which these human services agencies are responsible (McLaughlin & Christensen, ND).

Gore & Nelson (1979) have suggested that the development of specialized services has led to three forms of isolation: 1) separation and isolation of agencies from each
other, 2) separation and isolation of agencies from the community and 3) estrangement of agencies from both the people they serve and those they might potentially serve. In the case of services for handicapped students, actions at state and federal levels have resulted in an increase of demands upon human services agencies (e.g., education, social services, health, rehabilitative services) in order to meet the educational and related needs of this population (Rogers & Mulford, 1982b). The result has been an ever increasing awareness on the part of agency administrators, clients (parents of handicapped children) and legislators that the existing multiple agency service system lacks the necessary coordination and efficiency (Code of Virginia, Section 2.1-700). Isolationism (Gore & Nelson, 1979), fragmentation of services through specialization and the absence of an overarching authority structure between agencies (Rogers & Mulford, 1982a) requires the deliberate broadening of the interaction between the agencies (Warren, 1975).

However, Kamerman and Kahn, (1976) conducted a review of the literature as well as numerous case studies and concluded that interagency collaborative models have not been perceived as successful by agency administrators or clients. Even before Kamerman and Kahn's report was published, and most definitely after, much of the literature and research results indicate that a new perspective to the study and development of interagency collaboration is needed (Benson,
Koenig (1981) has pointed out that the study of interagency collaboration and interagency relationships should not be a measure of transactions among a network of three or more organizations, but rather there should be more emphasis on the processes and activities that lead to cooperative and harmonious interactions. He suggested such variables as awareness, communications and domain consensus. Further, he preferred to examine the social system between agencies that can be defined in terms of interactions and interdependencies among members rather than among agencies. Warren (1967a) suggested that the analysis of organizations should include and account for the impact of personality of individuals as well as situational variables such as style of leadership, method of decision making and dealing with uncertainty (Thompson, 1967).

Kane (1975) identified eight interrelated topics deemed necessary to ensure competent, coherent, unfragmented and comprehensive services to people who need assistance. The topics he identified were: 1) the individual in the group; 2) team size; 3) group norms; 4) democracy; 5) decision making; 6) communication and structure; 7) leadership; and 8) productivity. All of these topics or factors are descriptors of teamwork. The effectiveness of any group in any setting is related to both its capability to do the work and its ability
to manage itself as an interdependent group of people (Rubin & Beckhard, 1972).

Interagency collaboration in Virginia has been recognized as an important component of program planning and service delivery systems for handicapped children and youth. The reference to collaboration among agencies first appeared in Virginia School Laws (Section 22.1-214, Code of Virginia) in 1974. Legislation was passed that required school divisions as part of their local planning efforts to develop inter-agency agreements to assure the delivery of related services for handicapped children.

Almost a decade later, in 1984, the Interagency Coordinating Council was established by mandate of the General Assembly. This legislation stipulates that thirteen state agencies will formulate a plan to coordinate the delivery of related services for handicapped children and youth in Virginia. This coordination of services includes the establishment of local interagency efforts as well. The success of the state and local teams depends greatly on the capability and willingness of the members to work together to identify systemic issues and find reasonable solutions to these issues.

Statement of the Problem

The purpose of this study was to determine whether teamwork factors are perceived as enhancing the level of success of interagency collaborative. As part of this research,
consideration was given to such dimensions of the population as the perceptions of top and mid-level administrators, administrators across agencies as well as state- and local-level administrators.

Theoretical Rationale

The theoretical rationale for this study was drawn from two areas of theory and research: 1) Interorganizational Coordination and 2) Group Behavior. Each of these theory fields, over the past three decades, has generated numerous semantic references and terminology which, generically speaking, attempt to explain similar concepts and theoretical models. For example, in the area of interorganizational coordination, the literature refers to such terms and concepts as interorganizational cooperation (Schermerhorn, 1975), interorganizational exchange (Adamack & Lavin, 1975), organizational interdependence (Aiken & Hage, 1968), interagency cooperation (Aram & Stratton, 1974), interorganizational relationships (Baker & Clark, 1981), interagency relationships (Cook, 1979), interorganizational analysis (Litwak & Hylton, 1970) and interagency collaboration (McLaughlin & Covert, 1982). In the field of group behavior, terms such as team development (Woodman & Sherwood, 1980), intergroup cooperation (Rabbie, 1971), group dynamics (Odhner, 1970), group problem-solving behavior (Hendrick, 1979) and teamwork (Boss, 1983; Fennell & Sandefur, 1983) have been defined and used.
Interorganizational Theory. An attempt to understand Interorganizational Coordination as a phenomena is not of recent concentration for researchers. It has been researched and reported in the literature for at least three decades.

The most reported model in research is the systems approach to analysis and understanding of interorganizational coordination. This perspective is reflected in this quote by Koenig (1981), "Generically, social systems can be defined as interactions and interdependencies among members - in this case organizations. As goal oriented, or controlled systems, these IORs (interorganizational relations) are oriented toward one or more objectives that serve as a basis for integrating and governing activities among organizations." Warren (1967a) refers to the interaction of organizations as the interorganizational field while Negandhi (1975) stressed that interorganizational theory is founded in systems theory - open systems, input-output, system boundaries - and involves the study of multivariate models to examine patterns of relationships between organizations.

Most recently, Rogers & Mulford (1982a), after reviewing the literature on interorganizational theory and research, concluded that

...different philosophies and strategies of coordination are closely associated with general environmental conditions present at a particular time. Miller and Form (1964) posit a relationship between managerial strategies and the more general social structure, including technology and values, and Stinchcomb (1965) posits that
the formation and type of organization are affected by the social structure of the environment. As with the management of single organizations, philosophies of management and approaches to the coordination of multiple organizations also reflect important forces in the social, political, and economic environment which organizations operate (p. 32).

Several key constructs have been identified in the literature attempting to explain interorganizational coordination. Researchers have discussed these constructs under two broad categories: a) Barriers to effective interorganizational cooperation and b) Factors which improve coordination among organizations.

Barriers to effective interorganizational cooperation have been identified by researchers as follows: a) competition and conflict for limited resources (Levine & White, 1961; Molnar & Rogers, 1979; Mott, 1968; Schermerhorn, 1975; Rothwell, 1983); b) lack of trust (Hall, 1975); c) lack of adequate decision-making structure (DeWitt, 1977; Kane, 1975; White & Vlasack, 1974); d) lack of communication (Hall, 1975; White & Vlasack, 1974) and e) lack of insightful leadership (Levine & White, 1961; Wright, 1977).

The fact that organizations must or should coordinate has been well established (Negandhi, 1975; Rogers & Mulford, 1982a). A review of the literature regarding barriers to coordination reveals conflict as indicative of interorganizational coordination. Therefore, according to Hall et al. (1977), to enhance coordination among organizations, minimiz-
ing conflict is crucial.

What are those factors which enhance coordination? Investigations by researchers reveal these elements: a) quest for survival by organizations (Halpert, 1982), b) building trust (Hall et al., 1977; Woodard, Copper & Trohanis, 1982), c) improved communication (Hall et al., 1977; Kane, 1975), d) procedures for decision making (Hall et al., 1977; Kane, 1975) and effective leadership (Kane, 1975).

Since interorganizational analysis involves the systematic examination of relationships and interactions between individuals representing organizations, the theoretical constructs of small group behavior are useful to an understanding of interorganizational coordination. A review of the literature in the area of small group behavior indicates that conflict and its effect on a group in problem solving, decision making and communication is the predominant theme and the primary focus of small group theory and research (Back, 1979; Hare, 1962; Koenig, 1981; Lippitt, 1982; Zander, 1979). Leadership, whether it is provided by an individual or as part of the group dynamics, is also a necessary ingredient to the process of problem solving, communication and decision making for a group (Boss, 1978; Stasser, Norbert & Davis, 1980). Also, trust among group members is a critical variable to productive and harmonious relationships (McClintock & Keil, 1981; Zander, 1979).

Based on the above findings in the literature, and for
the purpose of this study, this researcher identified the following factors as the key variables: trust, decision-making, problem-solving process, communication and leadership. These variables are the salient features of: 1) the barriers to interagency collaboration, 2) those factors which improve interagency collaboration and 3) those factors which critically define teamwork in the group process.

Definition of Terms

Mulford and Rogers (1982) posited a definition of coordination that is "consistent with the literature, useful to practitioners who would be guided by its meaning, and capable of being evaluated as to its outcomes" (p.9). Based on their review of the literature, they recognized a consistent use of decision making by specialists and practitioners. For the purposes of this research, Mulford and Rogers' definition of interorganizational coordination was adopted as the definition for interagency collaboration. This definition is as follows: "the process whereby two or more organizations create and/or use existing decision rules that have been established to deal collectively with their shared task environment" (p.12).

Teamwork - the effectiveness of a group's work procedures and interpersonal relationships. An important facet of teamwork is deciding how the team handles conflict (Maynard, 1982).

Communication - intercourse by words, letters, or mes-
sages; interchange of thoughts or opinions (Merriam-Webster Dictionary, 1974).

**Leadership** - the process of influencing the activities of an individual or a group in efforts toward goal achievement in a given situation (Hersey & Blanchard, 1982).

**Decision making** - the act of achieving closure wherein the group membership adheres to a set of predetermined rules (e.g., consensus of the group, majority vote).

**Problem solving** - a process wherein a question or issue is raised, possible solutions are generated and the most reasonable solution is selected (Hoffman, 1979).

**Trust** - to place confidence in or to depend upon another or others; an expectancy held by an individual that the word, promise, or statement of another is reliable (Merriam-Webster Dictionary, 1974).

**General hypotheses**

It was the purpose of this study to determine whether teamwork factors are perceived as enhancing the level of success of interagency collaborative. The research hypotheses investigated were:

1. There is a significant positive relationship between the perceived level of success in interagency collaboration and the perceived existence of teamwork factors.

2. There is a significant positive relationship
between the perceptions of top-level agency personnel and the mid-level agency personnel regarding the perceived level of success in interagency collaboration.

3. There is a significant positive relationship between the perceptions of top-level agency personnel and mid-level agency personnel as to which teamwork factors contribute toward successful interagency collaboration.

4. There is a significant positive relationship between agencies as to which teamwork factors contribute toward successful interagency collaboration.

5. There is a significant positive relationship between the perceptions of state interagency personnel and local interagency personnel as to which teamwork factors contribute toward successful interagency collaboration.

Limitations of the Study

The design and conduct of this study was differentiated description using time-ordered association to see how the different subgroups in the sample are distributed (Glock, 1967). As such, one of the major limitations of this study was that the results cannot be used to explain a causal relationship between success in interagency collaboration and teamwork factors. One can, however, with supporting theory,
check on certain images (Glock, 1967) related to teamwork factors and perceived success in interagency collaboration. This approach, differentiated description, allows for the generation of plausible explanations of individuals' behavior in interagency coordinating committees with the subsequent refinement and testing of explanatory hypotheses in later research.

Another factor that was considered in reviewing and analyzing the data from these study was that the respondees, while making decisions in response to each survey item, may be influenced by certain expectations or preconceived notions (McDaniel, 1974; Ysseldyke, Algozzine & Richey, 1982). Dealing with such concepts as customs, norms, attitudes and values can be problematic. Human responses are influenced by the presence and variability of these concepts. Therefore, there was need to be cautious in the analysis of the data (McDaniel, 1974).
CHAPTER II

REVIEW OF THE LITERATURE

Summary of Rationale and Relationship to Problem

The number of public services programs serving handicapped children has increased over the past two decades. According to Benson (1975), Whetten (1982) and Elder (1982) this growth and subsequent specialization of services has resulted in a fragmented delivery system. Agency administrators have attempted to work cooperatively with other agency administrators to resolve the myriad of issues that confront them. Yet, Kamerman and Kahn (1976), Rogers and Mulford (1982a) and Rubin and Beckhard (1972) suggest that agency administrators have met only with limited success.

Conflict has been identified by several researchers as pervasive to interagency activity (Hall, 1975; Levine, White and Paul, 1963). To enhance coordination among organizations, conflict must be reduced (Hall, 1975). It was the intent of this study to investigate whether the presence of teamwork elements was perceived as enhancing the level of success of interagency collaborative efforts being conducted by service agency personnel working with handicapped children and youth in Virginia.

Theoretical Concepts

Two theoretical bases served to establish the conceptual framework of this study: Interorganizational Theory and Small Group Theory. Each of these theories is reviewed as follows:

Interorganizational Theory. Interorganizational coor-
Coordination has been researched and reported in the literature for at least three decades. It has been examined by both scholars and practitioners. Succinctly stated, the basic premise of Interorganizational Theory is that concerted decision making and cooperative program planning and implementation will lead to more successful outcomes than will independent actions of organizations (Rogers & Mulford, 1982b).

Mulford and Rogers (1982) presented a definition of interorganizational coordination that, they suggested, is "consistent with the literature, useful to practitioners who would be guided by its meaning, and capable of being evaluated as to its outcomes" (p.9). Based on their review of the literature, they recognized a consistent use of decision-making by specialists and practitioners. Therefore, they defined interorganizational coordination as "the process whereby two or more organizations create and/or use existing decision rules that have been established to deal collectively with their shared task environment" (p.12).

Another major, as well as useful, perspective to understanding interorganizational theory is the systems approach to the analysis of interorganizational coordination. Koenig (1981) observes, "Generically, social systems can be defined as interactions and interdependencies among members - in this case organizations. As goal oriented, or controlled systems, these interorganizational relations are oriented toward one or more objectives that serve as a basis for integrating
and governing activities among organizations." Warren (1967a) refers to the interaction of organizations as the interorganizational field while Negandhi (1975) stressed that interorganizational theory is founded in systems theory - open systems, input-output, system boundaries - and involves the study of multivariate models to examine patterns of relationships between organizations. Rogers and Mulford (1982b), after reviewing the literature on interorganizational theory and research, concluded that, as is the case with management of single organizations, philosophies of management and approaches to the coordination of multiple organizations also reflect important forces in the social, political, and economic environment which organizations operate.

Small Group Theory. The theoretical premise of the research conducted regarding small groups is that when a group of individuals meet to accomplish specific tasks, their success is affected by how well individual personalities in the group mesh and by the dynamics of the group interactions and processes (Boss, 1983; Golembiewski, 1962; Hare, 1983). According to Hare (1962), the study of small group behavior can be broken down into two categories of interaction: 1) Form of interaction - which consists of: a) the communication network; that is, the channels of communication between group members and b) interaction rate; that is, the frequency of interaction represented by the number and duration of contributions and 2) Content of interaction - which includes: a)
task behavior, that is, interaction directed toward the completion of group or individual tasks; and b) social-emotional behavior, that is, interactions directed toward the relationships between group members that form the basis for problem solving. He went on to suggest that human behavior in groups and the inherent problems of group dynamics can be viewed from four perspectives: the group, the individual, the task and the social-emotional dimension of human interaction.

Teamwork is deemed necessary to ensure competent, coherent, unfragmented and comprehensive services to people who need help. The interprofessional team is a small face-to-face group and is subject to the same laws and tendencies as any group (Kane, 1975). Based on the above findings in the literature, and for the purposes of this study, this researcher has identified the following factors as key variables: trust, decision making, problem-solving process, communication and leadership. These variables are the salient features of 1) the barriers to interagency collaboration (the lack therein), 2) those factors which improve interagency collaboration and 3) those factors which critically define teamwork in the group process.

Relevant Research

In the area of Interorganizational Theory, research related to this study is found under a) studies which examined the barriers to effective interorganizational cooperation and b) factors which improve coordination among organizations.
These areas are reviewed as follows:

**Barriers to effective interorganizational cooperation**

Coordination may be defined as "the process of adjustment, where by two or more organizations use decision rules of their own choosing, or decision rules that have been mandated to deal collectively with their shared task environment." (Mulford and Rogers, 1982, p. 12). This definition assumes that 1) organizations coordinate in order to survive and 2) coordination cannot occur without some level of internal adjustment to the structure of the organization (Halpert, 1982). The first assumption implies competition and conflict (Levine et al, 1963; Molnar & Robers, 1979; Mott, 1968; Rothwell, 1983; Schermerhorn, 1975). The second assumption includes, as the most relevant variable, the individuals who work with and within organizations. Both of these assumptions play a key role in understanding the barriers to interagency cooperation as reflected in the literature.

Organizations compete for the limited financial and human resources available in state and local governments. This factor serves as the impetus to organizational strife and conflict and serves to maintain or increase interpersonal conflict between the staffs of the respective organizations (Benson, 1975). Aiken et al. (1975) found in a study of human service agencies that conflict grows out of confusion over who has the authority over certain goals and out of competition for clients. Viewed from another perspective, Aiken and
Hage (1967) found evidence from their research to support the premise that loss of autonomy, funds, personnel and power were factors which increased the probability of conflict between organizational leaders.

Interprofessional and interpersonal factors are important when considering barriers to interorganizational coordination (Gardner and Snipe, 1970). Specialization of training as well as leadership and professional socialization can be inhibiting factors (Wright, 1977). Research by Hall et al. (1977) indicated that lack of trust and diminishing the human factor which erodes the level of trust were prime contributors of conflict in interorganizational coordination. Decline of trust accompanied by a proliferation of case management and the provision of services are factors which contribute to conflict and counterproductive behavior (Woodard et al., 1982).

White and Vlasak (1974) reported from their research that decision making with respect to control and allocation of resources in an interorganizational environment is a common dimension in the findings of researchers. They described the relationship between organizations as an interdependent one wherein organizational decision makers attempt to control scarce resources and to acquire resources controlled by other organizations. The lack of decision-making strategies as a function of a group was identified by Kane (1975) and DeWitt (1977) as inhibiting the collaborative process. They found
that there is a significant relationship between decision-making strategies and conflict resolution in group problem solving.

Lack of communication was identified by several researchers as presenting systematic barriers to cooperation. White and Vlasak (1974) called for mechanisms to encourage communication between organizations which, again, would reduce conflict and improve relationships. Hall (1975) posited that the growth of bureaucracies is the most commonly expressed barrier to open exchange of information across organizations. Based on perceptions of individuals working in bureaucratic systems, his research findings indicated that increasingly rigid rules and procedures and rigid leadership styles increased frustration and reduced communication among service providers.

Lack of insightful leadership is sighted often in the literature as increasing the level of conflict between individuals across organizations. This increased level of conflict is perceived as reducing cooperation among these individuals (Wright, 1977). Levine et al (1963) reported that as leadership interests are threatened, organizational administrators will disguise subverting actions by exaggerating structural differences between organizations and exaggerating the possibility of the organization losing its identity.

Factors which improve coordination among organizations.

A review of the literature by Halpert (1982) showed
that the quest for survival by organizations is the prime reason giving impetus to interorganizational coordination. Halpert (1982) writes:

...the volatility within the political economy generates environmental uncertainty and turbulence (Terreberry 1968) for public agencies, motivating them toward initiating coordination activities. A retrenching economy and the highly fluctuating sociopolitical predispositions of Congress and state legislatures sow the seeds of environmental unpredictability for public organizations, making them all the more aware of their tenuous existence. Survival through cooperation or coordination becomes viewed as desirable (p. 60).

The fact that organizations must or should coordinate appears to be well established (Negandhi, 1975). Yet, what are those factors which enhance coordination? This has been the subject of extensive study for at least two decades. A review of the literature regarding barriers to coordination revealed conflict as characteristic of interorganizational coordination. The greater the level of conflict, the less productive the coordinated effort. An examination of the literature for enhancement factors centers, as well, on the reduction of conflict as the most important factor to improved coordination (Hall, 1975).

How is conflict to be reduced? The research results of Woodard et al. (1976) would suggest that a positive attitude among those coordinating is crucial. A positive attitude should build trust and effective communication. Miklich (1974) examined the perceived conflict and cooperation exist-
ing among four recreation agencies. He concluded that better communication was needed between agencies to effect better planning and a greater degree of cooperation.

Kane (1975) purported that communication, in all its forms, is the vehicle by which individuals interact and work gets done. He also identified decision making, trust and leadership as key ingredients to improved coordination.

Hall et al. (1977) conducted research in which data collected from trained observers, record reviews and a survey, were analyzed showing that increased decision making, trust, communication and competence of personnel are fundamental to effective interorganizational coordination. Trust and mutual support are gradually developed as a result of open, direct communication they predicted.

Teamwork

A review of the literature in this area reveals that conflict and its effect on the group in problem solving, decision making and communication is the predominant theme and the primary focus of small group theory and research (Back, 1979; Hare, 1962, 1976, 1983; Kane, 1975; Koenig, 1981; Lippitt, 1982; Shaw, 1971; Zander, 1979). Leadership, whether it is provided by an individual or as part of the group dynamics, is also a necessary ingredient to the process of problem solving, communication and decision making for a group (Boss, 1978; Kane, 1975; Stasser et al., 1980). Finally, trust among the group members is a critical variable
to productivity and harmonious relationships (McClintock & Keil, 1981; Zander, 1979). Each of these factors, i.e., trust, decision making, leadership, problem solving and communication, will be reviewed as follows:

**Trust** - This dimension of teamwork is reflected in such concepts as: 1) willingness of group members to share information, 2) freedom to express oneself, 3) openness in discussions, 4) willingness to work with other members of the group (Klimoski and Karol, 1976). The relationship of interpersonal trust to increased group creativity was reported in the study conducted by Klimoski and Karol. They found that groups with high levels of trust were able to consistently out-perform groups with low levels of trust. Meeker (1983) conducted a study wherein she hypothesized that two related processes mediate the effect of cooperation on individual's behavior in a conflict situation. These two processes, development of trust and development of positive reciprocity (a tendency to respond to help with help), were found to have a significant main effect ($p<.05$). She concluded that trust and a willingness to help contribute significantly to cooperative behavior.

**Decision making** - Decision-making groups are a central element of human societies. Democratic societies delegate the responsibility for many decisions to specific groups. The difficulty in reaching a group decision depends on the initial disparity of opinion within the group and the degree of
consensus required by a decision rule (Stasser et al., 1980). Rubin and Beckhard (1972) stated that a group is a problem-solving, decision-making mechanism. They suggested that the choices a group makes, as to the style of decision making, significantly influences group functioning.

Woodman and Sherwood (1980) reported in their study that a significant correlation existed between perceived effectiveness by members of a group having received training in decision making and their perception of improved decision-making ability. The expression of affect by a group involved in making decisions was examined by Guzzo and Waters (1982). The results of their study show that groups which delayed the expression of affect until after they had generated a list of possible solutions produced better decisions than did the control groups which expressed affective reactions early in meetings. They concluded that the delayed expression of affective reactions by group members is a better strategy to follow when groups are making decisions about emotionally arousing problems.

Leadership - The concept of leadership permeates the structures of theory and practice of organizations and, hence, shapes one's understanding of the nature of organized action and its possibilities. The actions and words of leaders serve to guide the attention of those involved in a situation in ways that shape the meaning of a situation (Smircich and Morgan, 1982). Research results suggest that
there is a significant relationship between group success and the presence of leadership in the group. In a study reported by Boss in 1978, evidence was presented which showed that leader absence has a significant impact upon the success of a confrontation teamwork activity.

Using Fiedler's Contingency Model of Leadership Effectiveness, Konar-Goldband, Rice and Mondarsh (1979) obtained results in a study which indicated a significant correlation between group atmosphere, group performance and the leader's style. A flexible, situational leadership style improved group performance and working atmosphere.

Berkowitz (1974) studied the effects of leadership on identification of conflict as well as the resolution of conflict in groups. His findings indicated that leadership is important to a group as they work to solve problems in pursuit of goals.

**Problem solving** - Several studies were reported in the literature regarding the relationship of problem-solving skills and a group's effectiveness and productivity. One such study conducted by Boss (1983) showed a significant relationship ($p<.05$) between group effectiveness and such factors as: 1) reduction in the level of conflict in groups and 2) increased demonstration of problem-solving skills in groups. In several studies, Hendrick (1979) has shown that the greater the direct participation of group members in solving problems the better will be the quality of the solutions and
the decisions. As well, his findings support previous research which has shown a significant increase in motivation of the members to carry-out the decisions made by the group.

Sutton and Ford (1982), in a study exploring the relationships among problem-solving adequacy, the appropriateness of organizational structures, and effectiveness of several subunits of a large, general hospital, found a significant, positive correlation between problem-solving adequacy and effectiveness of the hospital subunits (p<.05).

Communication - Voissem (1972) reported that his research consistently supported the hypothesis that the level of cooperation increased in groups as the level of communication increased. Snyder and Morris (1984) conducted research to examine four communication characteristics and the influence these characteristics might have on overall organizational performance. The four characteristics he examined were: 1) adequacy of information about organizational policies and procedures, 2) information exchange within the group, 3) supervisor as communicator, and 4) feedback about individual performance. His data supported the assumption that improved communication resulted in improved organizational performance.

In a study that pursued the question of interpersonal communication as a mediating variable between group structure and perceptions of group effectiveness, O'Reilly and Roberts (1977) found results which indicated that group
structure enhanced the group's ability to transmit information. This ability to transmit information more accurately was perceived as improving coordination and assisting groups to make effective decisions.

Summary of Research and Relationship to Problem

Interorganizational theory would suggest that the approach to research in this area should include an analysis of the social system between and among organizations. This analysis should include specific emphasis on the individuals in this social system as well as their personalities and other situational variables such as leadership, decision-making, communication, the element of trust and problem-solving. The theory base found in small group research suggests that those situational variables referenced above are significant factors to be considered in understanding and enhancing teamwork in small groups.

Interagency collaboration is an interorganizational function and, in order to fulfill its purpose, personnel from several agencies form an interactive working group. This study focused on whether teamwork factors were perceived as enhancing the level of success in interagency collaboration. Interorganizational theory and theory regarding the functioning of small groups served as the theoretical foundation.
CHAPTER III
METHODOLOGY

Population

The population for this study was administrators of state and local level agencies serving handicapped children, ages birth through twenty-one (21), in Virginia. At the state level of government, the network of agencies defined as having primary or secondary responsibility for providing services to handicapped children in Virginia includes: the Department of Mental Health and Mental Retardation, the Department of Health, the Department for Rights of the Disabled, the Department of Correctional Education, the Department of Visually Handicapped, the Department of Rehabilitative Services and the Department of Education. At the local level, each state agency has several counterparts. As well, for purposes of this study, administrators were placed into one of two groups based on job title or relative position within the organization.

Therefore, the population was stratified into two levels in the following manner:

1. at the state level of government, Level I was upper-level personnel of grade seventeen (17) or higher (e.g., state superintendent, commissioner, deputy commissioner, deputy superintendent) and Level II was middle-level personnel of grade sixteen (16) or lower (e.g., director, supervisor); and

2. at the local level of government, Level I was
upper-level personnel (e.g., local superintendent of public education, executive director of Community Mental Health Services Center) and Level II was middle-level personnel (e.g., director/supervisor of special education, county health supervisor).

The population was stratified into these two levels in order to determine if any relationships existed between the groups regarding the perceived level of success in interagency collaboration or the perceived existence of teamwork factors. Aiken and Hage (1967), Hall et al. (1977) and Rogers & Mulford (1982a) reported differences between high- and middle-level administrative personnel as to the types of barriers to collaboration they reported and their perceptions of success in these collaborative efforts. Generally, higher-level personnel reported more political barriers to collaboration and reported less interagency activity than their subordinates (middle-level personnel).

In the case of state and local agency personnel, no research has been reported in the literature which treated information on these two groups. However, for the researcher, there is a great-deal-of activity which occurs on an interagency level wherein conflict between state- and local-level agency personnel is evident. Much of this evidence is in the form of mandates and policy which state agencies impose on localities. As an example, recent legislation by the General
Assembly (Section 22.1-214) requires state agencies to develop and implement a plan of cooperation to be carried out at the local level.

The total population consisted of four hundred-sixty state and local agency personnel across the eight agencies. A frequency distribution of the surveys returned by level of government (i.e., state or local) and by level of position within an organization (i.e., top or middle) is provided in Table 3.1.

The return rate on the survey exceeded the criterion level of 80 percent for the overall return (81.5%) as well as for each stratum (State level - 82.9%; Local level - 81.3%; High position - 82.1%; Low position - 81.1%). Internal validity was, therefore, protected with adequate representation from the respective strata in the population (Cook and Campbell, 1979).

**Design**

The design of this study was an ex post facto paradigm. It was a systematic inquiry wherein no direct control of the independent variables occurred. Inferences about the relations among the variables were made, without direct intervention, from the concomitant variation of the independent and dependent variables (Kerlinger, 1973). The identification of
TABLE 3.1
FREQUENCY DISTRIBUTION OF SURVEY RETURNS

<table>
<thead>
<tr>
<th>Level of Government</th>
<th>Position in Agency</th>
<th>Top</th>
<th>Low</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>State</td>
<td></td>
<td>15</td>
<td>43</td>
<td>58</td>
</tr>
<tr>
<td>Local</td>
<td></td>
<td>141</td>
<td>176</td>
<td>317</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>156</td>
<td>219</td>
<td>375</td>
</tr>
</tbody>
</table>
independent and dependent variables was based on the specific hypothesis being tested. For example, the first general hypothesis states: "There will be a significant positive relationship between the perceived level of success in interagency collaboration and the perceived existence of teamwork factors." In this case the dependent variable was the perceived level of success in interagency collaboration with the independent variable being perceived existence of teamwork factors.

In ex post facto research, direct control of the independent variable(s) is not possible. Neither is it possible to randomly assign subjects to groups or to assign treatment to groups at random (Kirlinger, 1973). Rather, treatment is implemented before the researcher can prepare for it (Cook and Campbell, 1982). For this study, the treatment was the existence (in degrees) of teamwork factors in the conduct of interagency collaborative efforts. Interaction predictions were made based on certain teamwork factors and perceived success in interagency collaboration with intact groups (e.g., middle-level vs. higher-level administrators; state vs. local administrators; Health Department vs. Department of Education administrators). This approach provided information which allowed the researcher to make relatively strong inferences (Cook and Campbell, 1979) about the relationship between the perceived presence or absence of each teamwork factor and the perceived success of interagency collabora-
Instrumentation

A survey instrument was used to gather information from the defined population. The guidelines established by the American Statistical Association (ASA) (Ferber et al., 1980) for the development and conduct of reliable surveys were used by the researcher in the design and implementation of the survey instrument.

The survey instrument (Appendix A) contained four sections important to the design of this research. The first section was designed to collect the necessary demographic information, e.g., position, agency affiliation, state or local level of government. The second section (Item B of Part II) was used to obtain from the population the perceived level of success of interagency collaboration. Section three (Section C of Part II) served to elicit responses regarding the functioning of interagency teams on each of the five teamwork factors identified, i.e., communication, decision making, problem solving, leadership, trust. There were 10 items in this section. Therefore, each factor was measured on two separate dimensions as shown in Table 3.2.

The fourth section was designed to obtain individuals' perception of the relative importance of each of the five teamwork factors.

Procedures

Development and Validation of Instrument

The survey
<table>
<thead>
<tr>
<th>Dimension</th>
<th>Factor Measured</th>
</tr>
</thead>
<tbody>
<tr>
<td>C.1 Knowledge about other agencies</td>
<td>Communication</td>
</tr>
<tr>
<td>C.2 Decisions made by the team</td>
<td>Decision making</td>
</tr>
<tr>
<td>C.3 Problems being diagnosed</td>
<td>Problem solving</td>
</tr>
<tr>
<td>C.4 Feelings being expressed</td>
<td>Trust</td>
</tr>
<tr>
<td>C.5 Direction for task achievement</td>
<td>Leadership</td>
</tr>
<tr>
<td>C.6 Leadership manages conflict</td>
<td>Leadership</td>
</tr>
<tr>
<td>C.7 Communication between members</td>
<td>Communication</td>
</tr>
<tr>
<td>C.8 Trust between members</td>
<td>Trust</td>
</tr>
<tr>
<td>C.9 Procedures to guide group in making</td>
<td>Decision making</td>
</tr>
<tr>
<td>decisions</td>
<td></td>
</tr>
<tr>
<td>C.10 Uncertainty &amp; resolution of issues</td>
<td>Problem solving</td>
</tr>
</tbody>
</table>
instrument was developed and, subsequently, field tested for content validity with twenty (20) doctoral level students in educational administration at the College of William and Mary, Virginia Polytechnical Institute and State University, and Virginia Commonwealth University. The first draft of the instrument contained fifteen items in Part II - Section C (Appendix B). This first draft allowed for 3 items (dimensions) to measure each of the 5 factors. The doctoral students, after having filled out the survey, were asked to identify what construct (i.e.: communication, leadership, decision making, problem solving and trust) each of the 15 items in the survey was investigating (Appendix B). In addition, the survey was distributed to four nationally recognized experts in the field of interagency collaboration. They were asked to respond in the same fashion as the doctoral students. In particular, they were asked about the match between the intent of the study and the ability of the survey to collect the information needed.

Based on the comments and recommendations, as well as the analysis of the data from the twenty-four individuals, the instrument was revised. The primary revision of the instrument was the reduction of the 15 items in Part C to 10 items. The criteria for selecting the 10 items was: 1) the item needed an interrater agreement of 80% or better and 2) two items (dimensions) were retained to measure each of the 5 factors. Semantic as well as pragmatic changes were made to
the instrument as a result of the feedback received from the twenty graduate students and the four national experts.

**Data Collection** The data were gathered via a mail questionnaire which was sent to four hundred-sixty agency personnel in the Commonwealth of Virginia described earlier. For those surveys not returned to the researcher on or before the set deadline, two follow-up requests with replacement copies of the survey and an extended deadline were sent.

The confidentiality of responses made by those who chose to return a completed survey was the one ethical safeguard provided for in this study. Confidentiality was assured by informing the respondees that the data would be treated as an aggregate with the survey results being presented in the form of summaries. In addition they were assured that there would be no effort, as part of the data analysis, to make comparisons between localities and that all returned surveys would be properly destroyed as soon as the data had been entered on the computer (Ferber, Sheatsley, Turner & Waksberg, 1980).

**Test for Reliability of the Instrument** To test for the reliability of the instrument, twenty of the randomly selected respondees were contacted by telephone and were asked one third of the survey items. A Spearman Correlation Coefficient of .9307 (p<.05) between the responses on the telephone survey items and the responses on the mailed survey for the same items was obtained, thereby satisfying the relia-
bility requirement for this instrument.

**Statistical Hypothesis**

It was the intent with this study to determine whether teamwork factors were perceived as enhancing the level of success of interagency collaborative efforts being conducted by service agency personnel working with handicapped children and youth in Virginia. The research hypotheses investigated were:

\[ H_0^1 \] There is a significant positive relationship between the perceived level of success in interagency collaboration and the perceived existence of teamwork factors.

\[ H_0^2 \] There is a significant positive relationship between the perceptions of top-level agency personnel and the low-level agency personnel regarding the perceived level of success in interagency collaboration.

\[ H_0^3 \] There is a significant positive relationship between the perceptions of top-level agency personnel and low-level agency personnel as to which teamwork factors contribute toward successful interagency collaboration.
There is a significant positive relationship between agencies as to which teamwork factors contribute toward successful inter-agency collaboration.

There is a significant positive relationship between the perceptions of state inter-agency personnel and local interagency personnel as to which teamwork factors contribute toward successful interagency collaboration.

Statistical analysis

The means and standard deviations of the response items on the survey were generated for purposes of examining the distribution of each variable. Contingency tables (crosstabulation) were generated of all possible variable combinations having potential relationships of significance to the researcher. Chi-square and Lambda statistics were sought to determine the significance level (p < .05) of the respective associations being examined.

Multiple correlation and regression (Discriminant Analysis) were used to produce a linear combination of independent variables (perceived existence of teamwork factors) which correlated (p<.05) with the dependent variable (perceived level of success in interagency collaboration).
sis) were used to calculate the effects between the two groups (upper- and middle-level personnel) as to which of the five (5) teamwork factors were perceived to contribute significantly toward successful interagency collaboration (p<.05; Wilks' Lambda coefficient approaching 1).

Discriminant Analysis was used to calculate the effects between the agencies as to which of the five (5) teamwork factors were perceived to contribute significantly toward successful interagency collaboration (Wilks' Lambda coefficient approaching 1).

Discriminant Analysis was used to calculate the effects between the state and local personnel as to which of the five (5) teamwork factors were perceived to contribute significantly toward successful interagency collaboration (Wilks' Lambda coefficient approaching 1).

**Summary**

Administrators (n=375) of eight governmental service agencies, state and local, serving handicapped children, ages birth through twenty-one (21), in Virginia responded to the researcher's mailed survey. In addition to the demographic data, information on the perceptions of agency personnel regarding successful interagency collaboration and the perceived existence of teamwork factors was collected.

The design of the study was an ex post facto paradigm wherein the following general hypothesis was tested: There would be a significant positive relationship between the per-
ceived level of success in interagency collaboration and the perceived existence of teamwork factors. Multiple correlation and regression were used to produce a linear combination of independent variables (perceived existence of teamwork factors) which correlated ($p < .05$) with the dependent variable (perceived level of success in interagency collaboration).
CHAPTER IV
ANALYSIS OF RESULTS

The purpose of this study was to determine whether teamwork factors were perceived as enhancing the level of success of interagency collaboration. In addition, the researcher examined these related questions: 1) Was there a relationship between top-level and mid-level agency personnel regarding perceived level of success in interagency collaboration as well as teamwork factors which contribute toward successful interagency collaboration?; 2) Was there a relationship between agencies as to which teamwork factors contribute toward successful interagency collaboration?; and 3) Was there a relationship between state and local agency personnel as to which teamwork factors contribute toward successful interagency collaboration? The following analyses were performed to provide an aggregate of each survey item and to test each hypothesis using the data received from three hundred seventy-five subjects (n=375).

The responses of each subject on each of the survey items were tabulated using the SPSS\textsuperscript{X} package, CONDESCRIPTIVE, to produce the mean, standard deviation and range for these items. The results are illustrated in Table 4.1.

A review of this data analysis reveals that administrators perceived teamwork factors as making a significant contribution toward success in interagency collaboration (D.1 to D.5), yet, at the same time, it is their perception that these teamwork factors were not as evident in their current interagency contacts (C.1 to C.10).
TABLE 4.1
MEAN, STANDARD DEVIATION AND RANGE OF EACH SURVEY ITEM (n=375)

<table>
<thead>
<tr>
<th>Item</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Years in position</td>
<td>6.34</td>
<td>5.33</td>
<td>0 - 26</td>
</tr>
<tr>
<td>Years with agency</td>
<td>11.65</td>
<td>7.86</td>
<td>0 - 39</td>
</tr>
<tr>
<td>Years working collaboratively</td>
<td>13.00</td>
<td>7.52</td>
<td>0 - 39</td>
</tr>
<tr>
<td>Telephone contacts (av.) per month</td>
<td>16.15</td>
<td>26.18</td>
<td>0 - 40</td>
</tr>
<tr>
<td>Meetings (av.) per month</td>
<td>3.92</td>
<td>5.41</td>
<td>0 - 70</td>
</tr>
<tr>
<td>Level of experience in interagency collaboration</td>
<td>3.86</td>
<td>1.01</td>
<td>0 - 5</td>
</tr>
<tr>
<td>Level of success in interagency collaboration</td>
<td>3.09</td>
<td>.80</td>
<td>0 - 5</td>
</tr>
<tr>
<td>C.1</td>
<td>3.07</td>
<td>.89</td>
<td>0 - 5</td>
</tr>
<tr>
<td>C.2</td>
<td>2.75</td>
<td>1.02</td>
<td>0 - 5</td>
</tr>
<tr>
<td>C.3</td>
<td>3.32</td>
<td>.92</td>
<td>0 - 5</td>
</tr>
<tr>
<td>C.4</td>
<td>3.45</td>
<td>1.06</td>
<td>0 - 5</td>
</tr>
<tr>
<td>C.5</td>
<td>3.00</td>
<td>.97</td>
<td>0 - 5</td>
</tr>
<tr>
<td>C.6</td>
<td>3.00</td>
<td>.95</td>
<td>0 - 5</td>
</tr>
<tr>
<td>C.7</td>
<td>3.30</td>
<td>.92</td>
<td>0 - 5</td>
</tr>
<tr>
<td>C.8</td>
<td>3.12</td>
<td>.97</td>
<td>0 - 5</td>
</tr>
<tr>
<td>C.9</td>
<td>2.88</td>
<td>1.10</td>
<td>0 - 5</td>
</tr>
<tr>
<td>Cl0</td>
<td>2.93</td>
<td>.98</td>
<td>0 - 5</td>
</tr>
<tr>
<td>D.1</td>
<td>4.68</td>
<td>.74</td>
<td>0 - 5</td>
</tr>
<tr>
<td>D.2</td>
<td>4.20</td>
<td>.86</td>
<td>0 - 5</td>
</tr>
<tr>
<td>D.3</td>
<td>4.10</td>
<td>.89</td>
<td>0 - 5</td>
</tr>
<tr>
<td>D.4</td>
<td>4.25</td>
<td>.82</td>
<td>0 - 5</td>
</tr>
<tr>
<td>D.5</td>
<td>4.42</td>
<td>.85</td>
<td>0 - 5</td>
</tr>
</tbody>
</table>
Hypothesis \( H_0 \)

This hypothesis states that there is a significant, positive relationship between the perceived level of success in interagency collaboration and the perceived existence of teamwork factors.

The responses of each subject as to the perceived level of success in interagency collaboration (Item B of Part II on the survey instrument) as well as to the perceived existence of teamwork factors (Items C.1 to C.10 of Part II of the survey instrument) were analyzed using the SPSS\(^X\) statistical packages, CROSSTABULATIONS AND DISCRIMINANT. Group means and standard deviations of the responses (on a Likert scale of 1 to 5) were tabulated. The results are illustrated in Appendix C, Tables C.1 and C.2.

The Chi-square and Pearson correlation coefficient statistics were generated using the SPSS\(^X\) statistical package, CROSSTABULATIONS, to determine if a relationship or association existed between perceived level of success in interagency collaboration (B) and the perceived existence of teamwork factors (C.1 to C.10). The results of these analyses showed that a significant relationship did exist between subjects' (n=375) perception of the level of success in interagency collaboration and their corresponding perception as to the level of existence of teamwork factors (Table 4.2).

**Other Findings** Descriptive statistics and univariate tests of significance were next used to obtain informa-
tton about the distribution of the variables (C.1 to C.10) in the groups (B1 to B5; based on their respective responses to the perceived level of interagency collaboration, each subject was assigned to a group). The variables were considered simultaneously in order to incorporate information about their relationships. The SPSSX statistical package, DISCRIMINANT, was used to determine: 1) the level of association that existed within the group means (Wilks' Lambda) and 2) the level of significance for the equality of group means for each variable (F-ratio and significance level) (Table 4.3).

Small values of lambda are associated with functions that have much variability between groups and little variability within groups. Conversely, large values of lambda occur when the mean of the discriminant scores is the same in all groups and there is little between-groups variability. As well, the observed significance level of F for each teamwork factor (p < .05) indicated that the group means were not equal. The results of this analysis indicate that, while there was a significant difference between the groups (B1 to B5) on each of the teamwork factors, certain teamwork factors had greater predictability strength, that is, a lower Wilks' Lambda with, conversely, a higher F-ratio.

Table 4.4 contains the results of the stepwise method of the SPSSX DISCRIMINANT ANALYSIS. This method resulted in the identification of those teamwork factors which contributed substantially to group differences. Based on this
TABLE 4.2

HYPOTHESIS 1 - CHI-SQUARE AND PEARSON CORRELATION BETWEEN PERCEIVED LEVEL OF SUCCESS IN INTERAGENCY COLLABORATION (B) AND PERCEIVED EXISTENCE OF TEAMWORK FACTORS (C.1 TO C.10)

<table>
<thead>
<tr>
<th>B with:</th>
<th>Chi-square</th>
<th>Significance</th>
<th>Pearson's correlation</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>C.1</td>
<td>123.536</td>
<td>.000*</td>
<td>.500</td>
<td>.000*</td>
</tr>
<tr>
<td>C.2</td>
<td>28.394</td>
<td>.028*</td>
<td>.155</td>
<td>.001*</td>
</tr>
<tr>
<td>C.3</td>
<td>146.367</td>
<td>.000*</td>
<td>.506</td>
<td>.000*</td>
</tr>
<tr>
<td>C.4</td>
<td>90.005</td>
<td>.000*</td>
<td>.435</td>
<td>.000*</td>
</tr>
<tr>
<td>C.5</td>
<td>107.881</td>
<td>.000*</td>
<td>.472</td>
<td>.000*</td>
</tr>
<tr>
<td>C.6</td>
<td>46.950</td>
<td>.000*</td>
<td>.167</td>
<td>.000*</td>
</tr>
<tr>
<td>C.7</td>
<td>142.824</td>
<td>.000*</td>
<td>.471</td>
<td>.000*</td>
</tr>
<tr>
<td>C.8</td>
<td>62.224</td>
<td>.000*</td>
<td>.225</td>
<td>.000*</td>
</tr>
<tr>
<td>C.9</td>
<td>41.626</td>
<td>.000*</td>
<td>.238</td>
<td>.000*</td>
</tr>
<tr>
<td>C.10</td>
<td>161.674</td>
<td>.000*</td>
<td>.554</td>
<td>.000*</td>
</tr>
</tbody>
</table>

*Significant at p < 0.05.
TABLE 4.3

HYPOTHESIS 1 – WILKS' LAMBDA (U-Statistic) AND UNIVARIATE F-RATIO ON PERCEIVED SUCCESS IN INTERAGENCY COLLABORATION AND PERCEIVED EXISTENCE OF TEAMWORK FACTORS

<table>
<thead>
<tr>
<th></th>
<th>Wilks' Lambda</th>
<th>F</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>C.1</td>
<td>0.759</td>
<td>29.33</td>
<td>0.000*</td>
</tr>
<tr>
<td>C.2</td>
<td>0.969</td>
<td>2.924</td>
<td>0.021*</td>
</tr>
<tr>
<td>C.3</td>
<td>0.726</td>
<td>34.87</td>
<td>0.000*</td>
</tr>
<tr>
<td>C.4</td>
<td>0.787</td>
<td>24.98</td>
<td>0.000*</td>
</tr>
<tr>
<td>C.5</td>
<td>0.821</td>
<td>20.22</td>
<td>0.000*</td>
</tr>
<tr>
<td>C.6</td>
<td>0.966</td>
<td>3.281</td>
<td>0.012*</td>
</tr>
<tr>
<td>C.7</td>
<td>0.768</td>
<td>27.93</td>
<td>0.000*</td>
</tr>
<tr>
<td>C.8</td>
<td>0.933</td>
<td>6.654</td>
<td>0.000*</td>
</tr>
<tr>
<td>C.9</td>
<td>0.940</td>
<td>5.898</td>
<td>0.000*</td>
</tr>
<tr>
<td>C.10</td>
<td>0.686</td>
<td>42.43</td>
<td>0.000*</td>
</tr>
</tbody>
</table>

Significant at p < .05.
TABLE 4.4

HYPOTHESIS 1 - SUMMARY TABLE OF DISCRIMINANT ANALYSIS (Stepwise selection) FOR DETERMINING PREDICTOR VARIABLES

<table>
<thead>
<tr>
<th>Step</th>
<th>Variable Entered</th>
<th>Wilks' Lambda</th>
<th>Sig.</th>
<th>Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>C.10</td>
<td>0.686</td>
<td>0.000*</td>
<td>Problem Solving</td>
</tr>
<tr>
<td>2</td>
<td>C.3</td>
<td>0.614</td>
<td>0.000*</td>
<td>Problem Solving</td>
</tr>
<tr>
<td>3</td>
<td>C.1</td>
<td>0.573</td>
<td>0.000*</td>
<td>Communication</td>
</tr>
<tr>
<td>4</td>
<td>C.7</td>
<td>0.546</td>
<td>0.000*</td>
<td>Communication</td>
</tr>
</tbody>
</table>

Significant at p < .05
analysis, two teamwork factors, problem solving and communication, provided optimal strength for predicting the level of success in interagency collaboration as perceived by the respondents.

Hypothesis $H_0^2$

This hypothesis states that there is a significant positive relationship between the perceptions of top-level agency personnel and the mid-level agency personnel regarding the perceived level of success in interagency collaboration.

The frequency of responses as to the perceived level of success in interagency collaboration (Item B of Part II on the survey instrument) with reference to either the top or mid-level agency group was tabulated using the SPSS$^X$ statistical package, CROSSTABULATIONS. The results of the cross-tabulations are presented in Table 4.5. A Lambda statistic of 0.99899 was generated indicating a high index of association between the two groups on perceived level of success in interagency collaboration.

Hypothesis $H_0^3$

This hypothesis states that there is a significant positive relationship between the perceptions of top-level agency personnel and mid-level agency personnel as to which teamwork factors contribute toward successful interagency collaboration.

The frequency of responses as to the perceived contri-
bution each teamwork factor makes toward interagency collaboration (Item D of Part II on the survey instrument) was calculated with respect to group membership, i.e., top-level or mid-level in their respective agency. These data were computed using the SPSSX statistical packages, CROSSTABULATIONS AND DISCRIMINANT. Group means and standard deviations of the responses (on a Likert scale of 1 to 5) were tabulated. The results are illustrated in Appendix C (Table C.6).

The results of the DISCRIMINANT ANALYSIS are presented in Table 4.6. All Lambda statistics for each of the teamwork factors indicated a high index of association between the two groups on the perceived level of contribution of each factor toward successful interagency collaboration.

Large values of lambda occur when the mean of the discriminant scores is the same in all groups and there is little between-groups variability. As well, the observed lack of significance of F for each teamwork factor indicated that the group means were equal. The results of this analysis indicated that, while there was no significant difference between the groups (top- and mid-level) on the contribution each of the teamwork factors makes toward successful interagency collaboration, there was a high degree of agreement by both groups that each teamwork factor was perceived as making a contribution toward successful interagency collaboration. An examination of the Group Means and Group Standard Deviations
TABLE 4.5

HYPOTHESIS 2 - CROSSTABULATIONS OF PERCEIVED LEVEL OF SUCCESS IN INTERAGENCY COLLABORATION WITH TOP-LEVEL AND MID-LEVEL AGENCY PERSONNEL

<table>
<thead>
<tr>
<th>Perceived Level of Success in Interagency Collaboration</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Row</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Top</td>
<td>34</td>
<td>74</td>
<td>40</td>
<td>7</td>
<td>156</td>
<td></td>
</tr>
<tr>
<td>Mid</td>
<td>48</td>
<td>110</td>
<td>52</td>
<td>7</td>
<td>219</td>
<td></td>
</tr>
<tr>
<td><strong>Column</strong></td>
<td>82</td>
<td>184</td>
<td>92</td>
<td>14</td>
<td>375</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>21.9</td>
<td>49.10</td>
<td>24.5</td>
<td>3.7</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

*Frequency of response.

**Row percentages.
TABLE 4.6

HYPOTHESIS 3 - WILKS' LAMBDA (U-Statistic) AND UNIVARIATE F-RATIO ON PERCEIVED CONTRIBUTION OF EACH TEAMWORK FACTOR BY TOP-LEVEL AND MID-LEVEL AGENCY PERSONNEL

<table>
<thead>
<tr>
<th>Wilks' Lambda</th>
<th>F</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>D.1</td>
<td>0.99213</td>
<td>2.958</td>
</tr>
<tr>
<td>D.2</td>
<td>0.99649</td>
<td>1.312</td>
</tr>
<tr>
<td>D.3</td>
<td>0.99570</td>
<td>1.611</td>
</tr>
<tr>
<td>D.4</td>
<td>0.99353</td>
<td>2.430</td>
</tr>
<tr>
<td>D.5</td>
<td>0.99757</td>
<td>0.9097</td>
</tr>
</tbody>
</table>
Table C.6 illustrated the consistency and high level of responses between groups and across teamwork factors. Hypothesis $H_0^4$

This hypothesis states that there is a significant positive relationship between agencies as to which teamwork factors are perceived as contributing toward successful interagency collaboration.

The frequency of responses as to the perceived contribution each teamwork factor makes toward interagency collaboration (Item D of Part II on the survey instrument) was calculated with respect to group membership, i.e., agency membership. These data were computed using the SPSSX statistical packages, CROSSTABULATIONS AND DISCRIMINANT. Group means and standard deviations of the responses (on a Likert scale of 1 to 5) were tabulated. The results are illustrated in Appendix C (Table C.7).

The results of the DISCRIMINANT ANALYSIS are presented in Table 4.7. All Lambda statistics for each of the teamwork factors indicated a high index of association between the agencies on the perceived level of contribution of each factor toward successful interagency collaboration.

Large values of lambda occur when the mean of the discriminant scores is the same in all groups and there is little between-groups variability. As well, the observed lack of significance of $F$ for each teamwork factor indicated that the group means were equal with the exception of D.5 (trust). The
results of this analysis indicated that, while there was no significant difference between the agencies on four of the five of the teamwork factors, there was a high degree of agreement by these groups that each teamwork factor was perceived as making a contribution toward successful interagency collaboration. An examination of the Group Means and Group Standard Deviations (Table C.7) illustrated the consistency and high level of responses between groups and across teamwork factors.

Other Findings Table 4.8 contains the results of the stepwise method of the SPSSX DISCRIMINANT ANALYSIS. This method resulted in the identification of that teamwork factor which contributed substantially to group differences. Based on this analysis, one teamwork factor, trust, provided optimal strength for differentiating between agencies and for predicting agency membership.

Hypothesis $H_0$

This hypothesis states that there is a significant positive relationship between the perceptions of state interagency personnel and local interagency personnel as to which teamwork factors contribute toward successful interagency collaboration.

The frequency of responses as to the perceived contribution each teamwork factor makes toward interagency collaboration (Item D of Part II on the survey instrument) was cal-
TABLE 4.7

HYPOTHESIS 4 - WILKS' LAMBDA (U-Statistic) AND UNIVARIATE F-RATIO ON PERCEIVED CONTRIBUTION OF EACH TEAMWORK FACTOR BY AGENCY

<table>
<thead>
<tr>
<th></th>
<th>Wilks' Lambda</th>
<th>F</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>D.1</td>
<td>0.97185</td>
<td>1.518</td>
<td>0.1595</td>
</tr>
<tr>
<td>D.2</td>
<td>0.98535</td>
<td>0.7797</td>
<td>0.6047</td>
</tr>
<tr>
<td>D.3</td>
<td>0.99048</td>
<td>0.5039</td>
<td>0.8316</td>
</tr>
<tr>
<td>D.4</td>
<td>0.97466</td>
<td>1.363</td>
<td>0.2199</td>
</tr>
<tr>
<td>D.5</td>
<td>0.94644</td>
<td>2.967</td>
<td>0.0049*</td>
</tr>
</tbody>
</table>

* Significant at p < .05.
### TABLE 4.8

**HYPOTHESIS 4 - SUMMARY TABLE OF DISCRIMINANT ANALYSIS**  
(Stepwise selection) FOR DETERMINING PREDICTOR VARIABLES

<table>
<thead>
<tr>
<th>Step</th>
<th>Entered</th>
<th>Lambda</th>
<th>Sig.</th>
<th>Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>D.5</td>
<td>0.946</td>
<td>0.005*</td>
<td>Trust</td>
</tr>
</tbody>
</table>

Significant at p < .05
culated with respect to group membership, i.e., state versus local membership. These data were computed using the SPSSX statistical packages, CROSSTABULATIONS AND DISCRIMINANT. Group means and standard deviations of the responses (on a Likert scale of 1 to 5) were tabulated. The results are illustrated in Appendix C (Table C.8).

The results of the DISCRIMINANT ANALYSIS are presented in Table 4.9. All Lambda statistics for each of the teamwork factors indicated a high index of association between each level of government (state vs. local) and the perceived level of contribution of each factor toward successful interagency collaboration. An examination of the Group Means and Group Standard Deviations (Table C.8) illustrated the consistency and high level of responses between groups and across teamwork factors.

Other Findings Table 4.9 contains the results of the stepwise method of the SPSSX DISCRIMINANT ANALYSIS. This method resulted in the identification of those teamwork factors which contributed substantially to group differences. From Table 4.9, it should be noted that only one variable, leadership, had a significant F-ratio in order to enter the analysis. After D.2 (leadership) was entered into the analysis (Table C.9), the interaction of the remaining factors resulted in one additional factor becoming eligible for entry into the analysis, D.5 (trust) (Table C.10). Based on this analysis, two teamwork factors, leadership and trust, provid
TABLE 4.9

HYPOTHESIS 5 - WILKS' LAMBDA (U-Statistic) AND UNIVARIATE F-RATIO ON PERCEIVED CONTRIBUTION OF EACH TEAMWORK FACTOR BY LEVEL OF GOVERNMENT

<table>
<thead>
<tr>
<th>Level</th>
<th>Wilks' Lambda</th>
<th>F</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>D.1</td>
<td>0.99881</td>
<td>0.443</td>
<td>0.5062</td>
</tr>
<tr>
<td>D.2</td>
<td>0.98168</td>
<td>6.960</td>
<td>0.0087*</td>
</tr>
<tr>
<td>D.3</td>
<td>0.99933</td>
<td>0.249</td>
<td>0.6181</td>
</tr>
<tr>
<td>D.4</td>
<td>0.99902</td>
<td>0.367</td>
<td>0.5449</td>
</tr>
<tr>
<td>D.5</td>
<td>0.99911</td>
<td>0.333</td>
<td>0.5637</td>
</tr>
</tbody>
</table>

Significant at p < .05.
TABLE 4.10
HYPOTHESIS 5 - SUMMARY TABLE OF DISCRIMINANT ANALYSIS (Stepwise selection) FOR DETERMINING PREDICTOR VARIABLES

<table>
<thead>
<tr>
<th>Step</th>
<th>Entered</th>
<th>Lambda</th>
<th>Sig.</th>
<th>Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>D.2</td>
<td>0.982</td>
<td>0.009*</td>
<td>Leadership</td>
</tr>
<tr>
<td>2</td>
<td>D.5</td>
<td>0.971</td>
<td>0.004*</td>
<td>Trust</td>
</tr>
</tbody>
</table>

* Significant at p < .05
ed optimal strength for differentiating between agencies and for predicting the membership in an agency at the state or local level (Table 4.10).

Summary

The results of the study follow in summary form. Administrators perceived that teamwork factors made a significant contribution toward success in interagency collaboration. However, it was their perception that these teamwork factors were not as evident in their current interagency contacts. Analyses resulting from the Chi-square and Pearson correlation coefficient statistics showed that a significant relationship (p < .05) did exist between subjects' perception of the level of success in interagency collaboration and their corresponding perception as to the level of existence of teamwork factors. Further analysis using univariate tests of significance to obtain information about the distribution of the variables indicated that there was a significant difference (p < .05) between the groups (group membership determined by perceived level of success in interagency collaboration) on each of the teamwork factors. As well, a stepwise method of DISCRIMINANT ANALYSIS demonstrated that two teamwork factors, problem solving and communication, contributed optimal strength for predicting the level of success in interagency collaboration as perceived by local and state agency personnel.
There was a high index of association (\(\Lambda = 0.99899\)) between the two groups (top- and mid-level agency personnel) on the perceived level of success in interagency collaboration.

The two groups, top-level and mid-level agency personnel, had a high index of association (\(\Lambda\) values approximating 1) on the perceived level of contribution each teamwork factor makes toward successful interagency collaboration. No significant difference between the groups (top- and mid-level) on the contribution each teamwork factor makes toward successful interagency collaboration occurred. This was evidenced by the high level of consistency and responses (means and standard deviations) at the upper end of the scale (i.e., 4 to 5).

There was a high degree of association between the agencies on the perceived level of contribution each teamwork factor makes toward successful interagency collaboration. In other words, there was a high degree of agreement among the respective agency personnel that it was their perception that each teamwork factor makes a significant contribution toward successful interagency collaboration. In addition, a step-wise method of DISCRIMINANT ANALYSIS demonstrated that one teamwork factor, trust, contributed substantially to differentiating between agencies and predicting the level of perceived success in interagency collaboration.

Finally, the results of the data analysis indicated a
high index of association between agencies as to the perceived level of contribution each teamwork factor makes toward successful interagency collaboration. Again, this was evidenced in the consistency of high indicators on the scale (4 - 5 on a scale of 1 to 5) between groups and across teamwork factors. Based on the results of the DISCRIMINANT ANALYSIS, two teamwork factors, leadership and trust, provided optimal strength for differentiating between agencies and for predicting the membership in an agency at the state or local level.
CHAPTER V

SUMMARY AND CONCLUSIONS

Summary

The purpose of this study was to determine the relationship of teamwork factors to perceived success of interagency collaborative. The researcher addressed such questions as: (1) Was there a relationship between the perceived level of success in interagency collaboration and the perceived existence of teamwork factors? (2) Was there a difference between top-level agency personnel and mid-level agency personnel regarding the perceived level of interagency collaboration as well as the teamwork factors which contribute toward successful interagency collaboration? (3) Was there a difference among agencies as to which teamwork factors contribute toward successful interagency collaboration? and (4) Was there a difference between state level agency personnel and local level agency personnel as to which teamwork factors contribute toward successful interagency collaboration?

Review of the Literature

The theoretical rationale for this study drew from two areas of theory and research: 1) Interorganizational Coordination (Aiken & Hage, 1968; Litwak & Hylton, 1970; Negandhi, 1975; Schermerhorn, 1975; Koenig, 1981) and 2) Group Behavior (Back, 1979; Hare, 1962; Koenig, 1981; Lippitt, 1982; Zander, 1979). Interagency collaboration is a planned effort involving personnel from two or more agencies (Stafford, Camp & Meer, 1984) who form an interactive working group (teamwork; group behavior) (Hare, 1962). Since interorganizational analysis involves the systematic
examination of relationships and interactions between individuals, the theoretical constructs of small group behavior were applied to identify the teamwork factors investigated in this study.

Based on previous findings, the following factors were identified as the key variables for this study: (a) trust, (b) decision making, (c) problem solving, (d) communication and (e) leadership. These variables are the salient features of: (1) the barriers to interagency collaboration, (2) those factors which improve interagency collaboration and (3) those factors which critically define teamwork in the group process.

**Research Methodology**

Administrators (n=375) of eight governmental service agencies, state and local, serving handicapped children, ages birth through twenty-one (21), in Virginia responded to the researcher's mailed survey. The survey instrument was validated with 20 graduate students and 4 national experts in interagency collaboration. A telephone follow-up on certain items in the survey with 26 randomly selected respondees resulted in a significant reliability coefficient (Spearman Correlation Coefficient of .9307).

The survey allowed the researcher to collect, in addition to certain demographic data, information on the perceptions of agency personnel regarding successful interagency collaboration and the perceived existence of teamwork factors.
The design of the study was an ex post facto paradigm wherein the following general hypothesis was tested: There would be a significant, positive relationship between the perceived level of success in interagency collaboration and the perceived presence of teamwork factors. Multiple correlation and regression analysis were used to produce a linear combination of independent variables (perceived existence of teamwork factors) which correlated (p<.05) with the dependent variable (perceived level of success in interagency collaboration).

**Major Findings**

Data were collected from three hundred seventy-five administrative personnel across eight service agencies in Virginia. These data demonstrated a significant and consistent relationship between perceived level of success in interagency collaboration and perceived existence, as well as the perceived contribution of teamwork factors in the enhancement of interagency collaborative efforts. Specific findings from these analyses were as follows:

1. Administrators across the eight agencies perceived that teamwork factors made a significant contribution toward success in interagency collaboration. However, it was their perception that these teamwork factors were not as evident in their interagency contacts.

2. The Chi-square and Pearson correlation coefficient statistics showed that a significant relationship (p < .05)
did exist between subjects' perception of the level of success in interagency collaboration and their corresponding perception as to the level of existence of teamwork factors. Further analyses using univariate tests of significance to obtain information about the distribution of the variables supports this relationship. These analyses indicated that there was a significant difference (p < .05) between the groups (group membership determined by perceived level of success in interagency collaboration) on each of the teamwork factors.

3. There was a high index of association (Lambda = 0.99899) between the top- and mid-level agency personnel on the perceived level of success in interagency collaboration. As well, the two groups had a high index of association (Lambda values approximating 1) on the perceived level of contribution each teamwork factor makes toward successful interagency collaboration. This was evidenced by the consistency of responses (means and standard deviations) at the upper end of the scale (i.e., 4 to 5).

4. There was a high degree of association between the agencies on the perceived level of contribution each teamwork factor makes toward successful interagency collaboration. In other words, there was a high degree of agreement among the respective agency personnel that it was their perception that each teamwork factor makes a significant contribution toward successful interagency collaboration. Again, this was evi-
denced in the consistency of high indicators on the scale (4 - 5 on a scale of 1 to 5) between groups and across teamwork factors.

5. As well, a stepwise method of DISCRIMINANT ANALYSIS was applied to the data in an effort to obtain information about the distribution of certain variables with respect to different groups (e.g., agencies, top- and mid-level agency personnel). The variables were considered simultaneously in order to incorporate information on their relationships. This approach resulted in the identification of those variables which contributed substantially toward group differences thereby providing optimal predictability for group membership. The results of this analysis for certain groups are as follows:

a. That two teamwork factors, problem solving and communication, contributed optimal strength for predicting the level of success in inter-agency collaboration.

b. That one teamwork factor, trust, contributed to differentiating between agencies as to the contribution this teamwork factor makes toward successful interagency collaboration. Generally, personnel from three of the eight agencies perceived trust as contributing less to successful interagency collaboration.

c. That two teamwork factors (as to the contri-
bution made toward successful interagency collaboration), leadership and trust, provided optimal strength for predicting the membership for an agency administrator as being at either the state or the local level of government. Generally, local agency personnel perceived these two teamwork factors as contributing less toward successful interagency collaboration.

Conclusions

Relative to this study and its major findings, the following conclusions can be made:

1. Administrators perceived that teamwork factors made a significant contribution toward success in interagency collaboration. However, it was their perception that these teamwork factors are not as evident in their interagency collaborative efforts.

2. A relationship did exist between the perceptions of agency personnel as to the level of success in interagency collaboration and their corresponding perception as to the level of existence of teamwork factors.

3. Top- and mid-level personnel within agencies did agree on the perceived level of success in interagency collaboration.

4. There was agreement between the agencies on the perceived level of contribution each teamwork factor makes toward successful interagency collaboration. Further, they
agreed that the contribution by each teamwork factor was a substantial one.

5. Problem solving ability and communication appear to be the two teamwork factors which best predicted the level of perceived success of interagency collaboration.

6. Trust appeared as a factor which differentiated between certain agencies as well as between state and local agency personnel. Local agency personnel did not identify trust as being as important as the other four factors, while three agencies did not view it as important. Even though this differentiation was significant, the over-all perception of the contribution trust makes to successful interagency collaboration was substantially high.

7. Local level agency personnel did not identify leadership as being as important as the other four factors.

Discussion

The effectiveness of any group in any setting is related to both its capability (i.e., skills) to do the work and its ability to manage itself as an interdependent group of people (Rubin & Beckhard, 1972). Based on a preponderance of findings in the literature regarding interorganizational analysis as well as group dynamics, the following elements of teamwork were identified as key factors to interagency collaboration: 1) trust, 2) decision making, 3) problem solving, 4) communication and 5) leadership.

The data in this study suggested that a) there was a
relationship between the perceived level of success in inter-agency collaboration and the perceived existence of these teamwork factors and b) these five teamwork factors were perceived as making a significant contribution toward inter-agency collaboration. Based on the indices of association that were generated in this study, it would appear that the higher the level of perceived success in interagency collaboration the higher the level of perceived existence of the five teamwork factors.

As anticipated by the researcher, more than 50% of the respondees perceived that the level of success in interagency collaboration was average or less (71.8% responded with a "3" or less on the 5 point scale). Given the relationship between this measure and the perceived level of existence of the respective teamwork factors, it would seem that the perceived existence of these factors was average or less than average. At the same time, these same individuals felt that these teamwork factors were necessary to the success of interagency collaboration. Therefore, those involved in interagency collaboration felt that teamwork was necessary to cooperation among agency personnel and that the perceived existence, or the lack thereof, played an important role in their perception of the level of success of interagency collaboration.

While the researcher recognized the limitations of this study, namely, that the results cannot be used to explain a
causal relationship between success in interagency collaboration and teamwork factors, these data do seem to support "plausible" explanations of individuals' behavior in inter-agency collaboration (Glock, 1967). This appears particularly relevant regarding the five teamwork factors examined in this study.

The theoretical premise of small group research is that the success of groups is affected by how well individual personalities in the group integrate and by the dynamics of the group interactions as well the processes of the group (Boss, 1983; Golembiewski, 1962; Hare, 1983). In the case of Inter-organizational Theory, the basic premise is that concerted decision making and cooperative planning and program implementation leads to more successful outcomes (Rogers & Mulford, 1982b).

The results of this study showed that administrators, across the eight agencies, perceived teamwork factors as enhancing interagency collaboration. As well, the significant relationship between perceived level of success in inter-agency collaborative efforts and perceived existence of teamwork factors is expected based on the theoretical foundations and research findings of small group theory and interorganizational theory.

Earlier, the researcher suggested that the respondees may have been influenced by certain expectations and preconceived notions (McDaniel, 1974; Ysseldyke, Algozzine &
Richey, 1982) in making decisions in response to each survey item. While this may have been the case with this survey, the researcher is reminded that little change occurs in any social system (Koenig, 1981) or in the level of conflict (Hall et al., 1977) without a change in the perceptions of the individuals involved or in the political realities of the multi-agency environment (Rogers & Mulford, 1982a).

The appearance of certain teamwork factors (i.e., problem solving and communication; trust; leadership) as predictors of group membership (i.e., level of success in interagency collaboration; state and local level; across agency) was an interesting finding. Based on the analysis, the perceptions of teamwork factors existing at a low level resulted in a significant probability that the perceived level of success in interagency collaboration would be low. In addition, the findings indicate that trust served to distinguish between certain agencies and, in conjunction with leadership, between local and state level personnel. Certain agencies as well as local level personnel perceived trust as contributing less toward successful interagency collaboration than the other four factors.

However, there were no research findings in the literature that would support or help explain this phenomenon. The researcher did not identify any studies which examined all five teamwork factors at once for comparison purposes, particularly as these factors relate to interagency collaboration.
Therefore, the results of this study regarding the distinguishing power of these factors needs to be more carefully researched.

Recommendations for Future Research

Several recommendations can be made for further research which would improve on the design and outcomes of this study. Also, there are certain limitations to this study which the researcher believes should be overcome in an effort to improve the over-all results of a study of this kind. These recommendations are as follows:

1. In addition to a survey approach, an ethnographic approach should be used. This would include forms of data collection such as observation of interagency collaboration in process, and analyses of reports and other records.

2. Conflict is indicative of interorganizational coordination. To enhance collaboration, it should be minimized (Hall et al., 1977). Therefore, future research should include the collection and analysis of data on the level of conflict as it relates to success in interagency collaboration. It may be that the predictive quality of certain teamwork factors (i.e., leadership, trust, problem solving, communication) is associated with the level of conflict in interagency collaboration; that is, the higher the level of conflict the more discrepant the responses on the trust factor.

3. A study of the effects of training on teamwork factors as enhancing interagency collaboration would be use-
ful in determining whether a causal effect does exist.
APPENDIX A
Survey Instrument
PART I - DEMOGRAPHIC INFORMATION

The information in this section of the survey is necessary in order that the information in the second section (PART II) may be properly treated statistically. This information will be treated with the utmost confidence and will be reported only in aggregate and statistical form.

Name: __________________ Location (county/city): _________________

Agency: _________________________ Check one: ___ State ___ Local

Position (title): _________________ Telephone: (___) ___ - _________

Years in this position: _____ Years with this agency: ______

Years working collaboratively with other agencies: ______

On the average, how often each month do you have contact with other agency personnel in the following two dimensions:

___ telephone ___ meetings

***************************

PART II - INTERAGENCY COLLABORATION & TEAMWORK

For each of the questions or statements, please record (by circling the number of your choice) on a scale of one to five (1 to 5) your perceptions of interagency collaborative efforts in the provision of services for handicapped children and youth.

A. Over the past year, your experience with interagency activities can be best described as: (circle a number)

1. no cooperation existed
2. very little cooperation existed
3. cooperation existed only on a client-by-client basis
4. cooperation existed among members of a recognized group but no formal planning took place
5. cooperation existed among members of a recognized group based on a formalized plan
Interagency survey (cont.)

B. How successful would you rate interagency team efforts in identifying and providing services for handicapped children across agencies? (circle a number)
   1. very poor
   2. poor
   3. good
   4. very good
   5. excellent

C. Please circle the number (1 - 5) which most nearly describes (relative to your experience) how interagency teams function on each of the following dimensions.

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>knowledge about other agencies is low</td>
</tr>
<tr>
<td>2</td>
<td>decisions are made by consensus of the team</td>
</tr>
<tr>
<td>3</td>
<td>problems are not diagnosed well</td>
</tr>
<tr>
<td>4</td>
<td>feelings are not freely expressed by the team</td>
</tr>
<tr>
<td>5</td>
<td>direction lacking which hampers task achievement</td>
</tr>
<tr>
<td>6</td>
<td>group leadership facilitates management of conflict</td>
</tr>
<tr>
<td>7</td>
<td>communication between members is infrequent</td>
</tr>
<tr>
<td>8</td>
<td>trust between members is high</td>
</tr>
</tbody>
</table>

knowledge about other agencies is high
decisions are made by part of the team
problems are clearly defined by the team
feelings are freely expressed by the team members
direction clear which enhances task achievement
group leadership does not facilitate management of conflict
communication between members is frequent
trust between members is low

---next page---
9. procedures exist 1 2 3 4 5 procedures do not exist in guiding the group to reaching decisions

10. uncertainty is high due to the lack of solutions of issues uncertainty is reduced through logical resolution of issues

D. On a scale of 1 to 5, please circle the number (1 being not important and 5 being very important) which most nearly describes the relative importance you would place on each of the following team factors as enhancing interagency collaborative efforts.

1. Communication 1 2 3 4 5
2. Leadership 1 2 3 4 5
3. Decision-making procedures 1 2 3 4 5
4. Problem-solving skills 1 2 3 4 5
5. Trust among the members 1 2 3 4 5

Your cooperation and contribution of time in completing this survey is deeply appreciated. If you are interested in a summary of the findings of this study, please check the following statement:

I am interested in receiving a summary of the findings.

Please forward the completed survey in the enclosed envelope.
May 27, 1986

Dear Colleague,

I am asking for your assistance in collecting information about interagency collaboration by completing the enclosed survey.

Interagency collaboration, whether at the state or local level of government, implies the existence of a group of personnel from the various human service agencies working together to plan and provide services. The effectiveness of these groups is related to both their capability to do the work and their ability to manage themselves as an interdependent group of people.

Does teamwork improve the work of interagency teams? What are the teamwork factors which improve the functioning of interagency teams? These questions serve as the foundation for a research problem being investigated as part of my doctoral dissertation. In an effort to seek answers to these questions, the attached questionnaire has been developed which focuses on interagency collaboration and on several dimensions of teamwork.

This endeavor has the support and endorsement of Mr. William L. Lukhard, Commissioner, Department of Social Services, as well as the State Interagency Coordinating Council. Please take about fifteen minutes to complete the attached survey. I realize you have a busy schedule but the results of this survey will provide a wealth of information to assist agency administrators and the Interagency Coordinating Council in the coordination of service delivery to handicapped children in this Commonwealth.

Again, I appreciate the time and effort you are giving to respond to this survey. Should you have any questions about the activity or the survey, please do not hesitate to contact me at (804) 225-2873 (335-2873 on SCATS).

Sincerely,

Leslie W. Jones

Enclosures
July 26, 1986

Dear Colleague,

Several weeks ago, I asked for your assistance in collecting information about interagency collaboration. As of this date, I have not received a return of the survey that was sent to you.

Your input into this interagency study is important. If you have not responded to the previous mailing, please take a moment of your time to fill out the duplicate of the survey which is enclosed with this letter. Should you have forwarded the survey to me already, please ignore this second request.

Thank you for your time and effort in assisting me in this project. Should you have any questions, please do not hesitate to contact me at (804) 225-2873 (335-2873 on SCATS).

Sincerely,

Leslie W. Jones

Enclosure
APPENDIX B

Survey Instrument Draft and Validation Form
INTERAGENCY COLLABORATION

PART I - DEMOGRAPHIC INFORMATION

The information in this section of the survey is necessary in order that the information in the second section (PART II) may be properly treated statistically. This information will be treated with the utmost confidence and will be reported only in aggregate and statistical form.

Name: ___________________ Location (county/city): ________________
Agency: ____________________ Check one: ___State ___Local
Position (title): _______________ Telephone: (___) _______
Years in this position: _____ Years with this agency: ______
Years working collaboratively with other agencies: ______

On the average, how often each month do you have contact with other agency personnel in the following two dimensions:

____ telephone _____ meetings

PART II - INTERAGENCY COLLABORATION & TEAMWORK

For each of the questions or statements, please record (by circling the number of your choice) on a scale of one to five (1 to 5) your perceptions of interagency collaborative efforts in the provision of services for handicapped children and youth.

A. Over the past year, your experience with interagency activities can be best described as: (circle a number)

1. no cooperation existed
2. very little cooperation existed
3. cooperation existed only on a client-by-client basis
4. cooperation existed among members of a recognized group but no formal planning took place
5. cooperation existed among members of a recognized group based on a formalized plan

-over-
B. How successful would you rate interagency team efforts in identifying and providing services for handicapped children across agencies? (circle a number)
   1. very poor
   2. poor
   3. good
   4. very good
   5. excellent

C. Please circle the number (1 - 5) which most nearly describes (relative to your experience) how interagency teams function on each of following dimensions.

1. knowledge about other agencies is low
   1 2 3 4 5 knowledge about other agencies is high

2. achievement of goals supported by planning
   1 2 3 4 5 achievement of goals not supported by planning

3. assignment of tasks is fragmented
   1 2 3 4 5 assignment of tasks is well coordinated

4. decisions are made by part of the team
   1 2 3 4 5 decisions are made by consensus

5. problems are not diagnosed well
   1 2 3 4 5 problems are clearly defined by the team

6. feelings are not freely expressed by the team members
   1 2 3 4 5 feelings are freely expressed by the team members

7. direction lacking which hampers task achievement
   1 2 3 4 5 direction clear which enhances task achievement

8. the team is open; new members are oriented quickly into group activities
   1 2 3 4 5 the team is closed; new members are ignored by the team
<p>| | | | | | |</p>
<table>
<thead>
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<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>facilitates management of conflict</td>
<td>group leadership does not facilitate management of conflict</td>
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<tr>
<td>10. communication between members</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>is low and is confused</td>
<td>communication between members is high and is understood</td>
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</tr>
<tr>
<td>11. trust between members</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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<tr>
<td>is low</td>
<td>trust between members is high</td>
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<tr>
<td>12. group meetings usually accomplish what is necessary</td>
<td>1</td>
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<td>group meetings usually do not accomplish what is necessary</td>
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<td>13. ideas and information are seldom exchanged between members</td>
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<td>ideas and information are often exchanged between team members</td>
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<td>14. procedures exist in guiding the group to reaching consensus</td>
<td>1</td>
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<tr>
<td>procedures do not exist in guiding the group to reaching consensus</td>
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<td>15. uncertainty is high due to the lack of solutions of issues</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<tr>
<td>uncertainty is reduced through logical resolution of issues</td>
<td></td>
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</tbody>
</table>
D. On a scale of 1 to 5, please circle the number (1 being not important and 5 being very important) which most nearly describes the relative importance you would place on each of the following team factors as enhancing interagency collaborative efforts.

1. Communication 1 2 3 4 5
2. Leadership 1 2 3 4 5
3. Decision-making procedures 1 2 3 4 5
4. Problem-solving skills 1 2 3 4 5
5. Trust among the members 1 2 3 4 5

Your cooperation and contribution of time in completing this survey is deeply appreciated. If you are interested in a summary of the findings of this study, please check the following statement:

___I am interested in receiving a summary of the findings.

Please send the completed survey in the enclosed envelope to Mr. Leslie W. Jones.
Validation of Survey Instrument

INTERAGENCY COLLABORATION

Your assistance in validating the attached survey instrument titled "Interagency Collaboration" is greatly appreciated. Please respond candidly to each of the questions that follow:

1. Take the survey and fill out PART I - Demographic Information. In doing so, did any of the directions or requests for information appear to be unclear as to intent. If so, indicate here or on the survey form what elements were unclear.
   Comments:

2. Please respond to items "A" and "B" of PART II - Interagency Collaboration and Teamwork. Again, in doing so, did any of the directions or requests for information appear unclear as to intent. If so, indicate here or on the survey form what elements were unclear.
   Comments:

3. Item "C" of PART II (containing 15 items) has a different format. Please fill out items 1 through 15 in section C as per the directions. Do the directions appear to be clear? If not, please comment:

   Next step - you will note that page 2 of this set of directions is a matrix. Please take this matrix and, for each of the items (1 - 15) of section C, mark (X) the box which corresponds to the teamwork factor (communication, leadership, decision-making, problem-solving and trust) that you perceive this item to be measuring. For example, item 1 deals with "knowledge about other agencies..."; decide which of the 5 teamwork factors you feel this item is measuring and place an X in the corresponding box of the matrix. Item 0 serves as an example.

   Please proceed to fill out the matrix using the items 1 through 15 of section C.

   -over-
Place an "X" in the box which corresponds to the factor you feel
is being measured by each item. Item 0 serves as an example only.

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<tr>
<th>factors</th>
<th>1</th>
<th>2</th>
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<th>5</th>
<th>6</th>
<th>7</th>
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</table>

To conclude, please fill out section D of PART II. Provide below any comments you
may have about whether the directions were clear and any suggestions you have to
improve the survey. Use a separate sheet of paper if you need more space to make
your comments.

Thank you for your time and for assisting me in this endeavor. If I can be of
assistance to you, now or later, in your efforts to achieve your goals in advanced
graduate studies, please let me know.

Use the enclosed stamped envelope to return this material: 1) the survey with your
responses and 2) this section which contains the matrix and your comments. Should
you have any questions, I can be reached at 804 225-2873 (or SCATS 335-2873).
APPENDIX C

Group Means, Group Standard Deviations, and Discriminant Functions and Correlations on:

Perceived Success in Interagency Collaboration, Perceived Level of Existence of Teamwork Factors, and Perceived Level of Contribution Each Teamwork Factor Gives toward Interagency Collaboration
| Group Means on Perceived Success in Interagency Collaboration (B) with Perceived Level of Existence of Teamwork Factors (C.1 to C.10) |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
|         | C.1     | C.2     | C.3     | C.4     | C.5     | C.6     | C.7     | C.8     | C.9     | C.10    |
| 1       | 2.333   | 1.667   | 2.333   | 1.667   | 2.333   | 1.667   | 2.333   | 1.667   | 2.333   | 1.667   |
| 2       | 2.378   | 2.549   | 2.378   | 2.549   | 2.378   | 2.549   | 2.378   | 2.549   | 2.378   | 2.549   |

B = Perceived level of success in interagency collaboration (Likert scale of 1 to 5).

C = Perceived existence of teamwork factors in interagency collaboration (See TABLE C.3 for listing of 10 items with factors measured by each item).
<table>
<thead>
<tr>
<th></th>
<th>C.1</th>
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<th>C.3</th>
<th>C.4</th>
<th>C.5</th>
<th>C.6</th>
<th>C.7</th>
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<td>0.577</td>
<td>1.000</td>
<td>1.000</td>
<td>1.000</td>
<td>0.577</td>
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<td>0.663</td>
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<td>5</td>
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<td>0.918</td>
<td>1.055</td>
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<td>0.953</td>
<td>0.918</td>
<td>0.973</td>
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<td>0.976</td>
</tr>
</tbody>
</table>

B = Perceived level of success in interagency collaboration (Likert scale of 1 to 5).

C = Perceived existence of teamwork factors in interagency collaboration (See TABLE C.3 for listing of 10 items with factors measured by each item).
### TABLE C.3
CORRESPONDENCE OF THE FACTORS
WITH THE DIMENSIONS MEASURED

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Factor Measured</th>
</tr>
</thead>
<tbody>
<tr>
<td>C.1 Knowledge about other agencies</td>
<td>Communication(D.1)</td>
</tr>
<tr>
<td>C.2 Decisions made by the team</td>
<td>Decision-making(D.3)</td>
</tr>
<tr>
<td>C.3 Problems being diagnosed</td>
<td>Problem-solving(D.4)</td>
</tr>
<tr>
<td>C.4 Feelings being expressed</td>
<td>Trust(D.5)</td>
</tr>
<tr>
<td>C.5 Direction for task achievement</td>
<td>Leadership(D.2)</td>
</tr>
<tr>
<td>C.6 Leadership manages conflict</td>
<td>Leadership(D.2)</td>
</tr>
<tr>
<td>C.7 Communication between members</td>
<td>Communication(D.1)</td>
</tr>
<tr>
<td>C.8 Trust between members</td>
<td>Trust(D.5)</td>
</tr>
<tr>
<td>C.9 Procedures to guide group</td>
<td></td>
</tr>
<tr>
<td>in making decisions</td>
<td>Decision-making(D.3)</td>
</tr>
<tr>
<td>C.10 Uncertainty &amp; resolution of issues</td>
<td>Problem-solving(D.4)</td>
</tr>
</tbody>
</table>
**TABLE C.4**

HYPOTHESIS 1 - CANONICAL DISCRIMINANT FUNCTIONS for Perceived Success in Interagency Collaboration with Perceived Existence of Teamwork Factors

<table>
<thead>
<tr>
<th>FCN</th>
<th>Eigenvalue</th>
<th>Pct of cum var.</th>
<th>Pct. corr.</th>
<th>canonical after fcn</th>
<th>Wilks' Lambda</th>
<th>Chi-Sq.</th>
<th>d.f.</th>
<th>sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td>100.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1*</td>
<td>0.801</td>
<td>97.97</td>
<td>97.97</td>
<td>0.667</td>
<td>0.984</td>
<td>6.099</td>
<td>9</td>
<td>0.730</td>
</tr>
<tr>
<td>2*</td>
<td>0.015</td>
<td>1.81</td>
<td>99.77</td>
<td>0.121</td>
<td>0.998</td>
<td>0.683</td>
<td>4</td>
<td>0.953</td>
</tr>
<tr>
<td>3*</td>
<td>0.001</td>
<td>0.14</td>
<td>99.91</td>
<td>0.034</td>
<td>0.999</td>
<td>0.258</td>
<td>1</td>
<td>0.611</td>
</tr>
<tr>
<td>4*</td>
<td>0.001</td>
<td>0.09</td>
<td>100.00</td>
<td>0.026</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Marks the 4 canonical discriminant functions in the analysis.
TABLE C.5

HYPOTHESIS 1 - POOLED WITHIN-GROUPS CORRELATIONS BETWEEN DISCRIMINATING VARIABLES AND CANONICAL DISCRIMINANT FUNCTIONS

<table>
<thead>
<tr>
<th></th>
<th>FUNC 1</th>
<th>FUNC 2</th>
<th>FUNC 3</th>
<th>FUNC 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>C.10</td>
<td>0.754*</td>
<td>-0.482</td>
<td>-0.006</td>
<td>-0.446</td>
</tr>
<tr>
<td>C.3</td>
<td>0.682*</td>
<td>0.562</td>
<td>-0.380</td>
<td>-0.274</td>
</tr>
<tr>
<td>C.4</td>
<td>0.517*</td>
<td>0.112</td>
<td>0.135</td>
<td>-0.073</td>
</tr>
<tr>
<td>C.5</td>
<td>0.379*</td>
<td>0.084</td>
<td>-0.054</td>
<td>-0.053</td>
</tr>
<tr>
<td>C.8</td>
<td>0.280*</td>
<td>-0.014</td>
<td>-0.019</td>
<td>0.011</td>
</tr>
<tr>
<td>C.6</td>
<td>0.234*</td>
<td>-0.102</td>
<td>-0.047</td>
<td>0.066</td>
</tr>
<tr>
<td>C.2</td>
<td>0.191*</td>
<td>-0.039</td>
<td>-0.096</td>
<td>-0.007</td>
</tr>
<tr>
<td>C.9</td>
<td>0.124*</td>
<td>-0.078</td>
<td>-0.006</td>
<td>-0.023</td>
</tr>
<tr>
<td>C.1</td>
<td>0.627</td>
<td>0.214</td>
<td>0.726*</td>
<td>0.180</td>
</tr>
<tr>
<td>C.7</td>
<td>0.613</td>
<td>-1.226</td>
<td>-0.312</td>
<td>0.690*</td>
</tr>
</tbody>
</table>

* Variables have been grouped within functions based on the largest size of the coefficient across functions.
TABLE C.6

HYPOTHESIS 3 - GROUP MEANS AND STANDARD DEVIATIONS FOR AGENCY LEVEL GROUPS (TOP & LOW) WITH PERCEIVED LEVEL OF CONTRIBUTION EACH TEAMWORK FACTOR MAKES TOWARD SUCCESSFUL INTERAGENCY COLLABORATION

<table>
<thead>
<tr>
<th></th>
<th>D.1</th>
<th>D.2</th>
<th>D.3</th>
<th>D.4</th>
<th>D.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agency Level</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Top</td>
<td>4.603</td>
<td>4.135</td>
<td>4.032</td>
<td>4.173</td>
<td>4.372</td>
</tr>
</tbody>
</table>

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Top</td>
<td>0.832</td>
<td>0.888</td>
<td>0.905</td>
<td>0.859</td>
<td>0.882</td>
</tr>
<tr>
<td>Low</td>
<td>0.659</td>
<td>0.834</td>
<td>0.883</td>
<td>0.815</td>
<td>0.825</td>
</tr>
<tr>
<td>Total</td>
<td>0.737</td>
<td>0.857</td>
<td>0.893</td>
<td>0.815</td>
<td>0.849</td>
</tr>
</tbody>
</table>

D.1 to D.5 = respectively, Communication, Leadership, Decision-making, Problem-solving, Trust.
**TABLE C.7**

**HYPOTHESIS 4 - GROUP MEANS AND STANDARD DEVIATIONS FOR EACH AGENCY WITH PERCEIVED LEVEL OF CONTRIBUTION EACH TEAMWORK FACTOR MAKES TOWARD SUCCESSFUL INTERAGENCY COLLABORATION**

<table>
<thead>
<tr>
<th>Agency</th>
<th>D.1</th>
<th>D.2</th>
<th>D.3</th>
<th>D.4</th>
<th>D.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4.455</td>
<td>4.060</td>
<td>4.000</td>
<td>4.061</td>
<td>3.879</td>
</tr>
<tr>
<td>2</td>
<td>4.763</td>
<td>4.316</td>
<td>4.000</td>
<td>4.263</td>
<td>4.553</td>
</tr>
<tr>
<td>4</td>
<td>4.770</td>
<td>4.462</td>
<td>4.077</td>
<td>4.462</td>
<td>4.462</td>
</tr>
<tr>
<td>5</td>
<td>4.698</td>
<td>4.038</td>
<td>4.151</td>
<td>4.170</td>
<td>4.377</td>
</tr>
<tr>
<td>7</td>
<td>4.786</td>
<td>4.262</td>
<td>4.095</td>
<td>4.357</td>
<td>4.595</td>
</tr>
<tr>
<td>8</td>
<td>4.400</td>
<td>4.2667</td>
<td>3.900</td>
<td>4.000</td>
<td>4.200</td>
</tr>
</tbody>
</table>

**Standard Deviations**

<table>
<thead>
<tr>
<th>Agency</th>
<th>D.1</th>
<th>D.2</th>
<th>D.3</th>
<th>D.4</th>
<th>D.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.003</td>
<td>1.088</td>
<td>1.061</td>
<td>1.059</td>
<td>1.219</td>
</tr>
<tr>
<td>2</td>
<td>0.751</td>
<td>0.873</td>
<td>0.959</td>
<td>0.978</td>
<td>0.828</td>
</tr>
<tr>
<td>3</td>
<td>0.704</td>
<td>0.871</td>
<td>0.831</td>
<td>0.745</td>
<td>0.795</td>
</tr>
<tr>
<td>4</td>
<td>0.599</td>
<td>0.776</td>
<td>1.038</td>
<td>0.660</td>
<td>0.776</td>
</tr>
<tr>
<td>5</td>
<td>0.668</td>
<td>0.854</td>
<td>0.794</td>
<td>0.753</td>
<td>0.740</td>
</tr>
<tr>
<td>6</td>
<td>0.344</td>
<td>0.848</td>
<td>0.717</td>
<td>0.665</td>
<td>0.593</td>
</tr>
<tr>
<td>7</td>
<td>0.682</td>
<td>0.767</td>
<td>0.878</td>
<td>0.759</td>
<td>0.735</td>
</tr>
<tr>
<td>8</td>
<td>0.932</td>
<td>0.640</td>
<td>1.155</td>
<td>0.910</td>
<td>0.961</td>
</tr>
<tr>
<td>TOTAL</td>
<td>0.738</td>
<td>0.857</td>
<td>0.893</td>
<td>0.815</td>
<td>0.849</td>
</tr>
</tbody>
</table>

D.1 to D.5 = respectively, Communication, Leadership, Decision-making, Problem-solving, Trust.
TABLE C.8

HYPOTHESIS 5 - GROUP MEANS AND STANDARD DEVIATIONS FOR GOVERNMENTAL LEVEL GROUPS (STATE & LOCAL) WITH PERCEIVED LEVEL OF CONTRIBUTION EACH TEAMWORK FACTOR MAKES TOWARD SUCCESSFUL INTERAGENCY COLLABORATION

<table>
<thead>
<tr>
<th>Factors</th>
<th>D.1</th>
<th>D.2</th>
<th>D.3</th>
<th>D.4</th>
<th>D.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>State</td>
<td>4.621</td>
<td>4.466</td>
<td>4.155</td>
<td>4.310</td>
<td>4.362</td>
</tr>
<tr>
<td>Local</td>
<td>4.691</td>
<td>4.145</td>
<td>4.091</td>
<td>4.240</td>
<td>4.432</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>State</td>
</tr>
<tr>
<td>Local</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

D.1 to D.5 = respectively, Communication, Leadership, Decision-making, Problem-solving, Trust.
TABLE C.9
HYPOTHESIS 5 - WILKS' LAMBDA AND EQUIVALENT F AT STEP I

At step 1, D.2 was included in the analysis.

<table>
<thead>
<tr>
<th></th>
<th>Degrees of Freedom</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wilks' Lambda</td>
<td>0.98168</td>
<td>1</td>
</tr>
<tr>
<td>Equivalent F</td>
<td>6.95981</td>
<td>1</td>
</tr>
<tr>
<td>Variable</td>
<td>Signif. of F to enter</td>
<td>Wilks' Lambda</td>
</tr>
<tr>
<td>----------</td>
<td>----------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>D.1</td>
<td>0.0442</td>
<td>0.97104</td>
</tr>
<tr>
<td>D.3</td>
<td>0.3438</td>
<td>0.97932</td>
</tr>
<tr>
<td>D.4</td>
<td>0.4779</td>
<td>0.98035</td>
</tr>
<tr>
<td>D.5</td>
<td>0.0428</td>
<td>0.97090</td>
</tr>
</tbody>
</table>
TABLE C.11

HYPOTHESIS 5 - WILKS' LAMBDa AND EQUIVALENT F AT STEP II

At step 2, D.5 was included in the analysis.

<table>
<thead>
<tr>
<th></th>
<th>Degrees of Freedom</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wilks' Lambda</td>
<td>0.97090</td>
<td>2</td>
</tr>
<tr>
<td>Equivalent F</td>
<td>5.57560</td>
<td>2</td>
</tr>
</tbody>
</table>

|                  | 1                  | 373          |
|                  | 372                | 0.0041       |
References


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ABSTRACT

THE RELATIONSHIP OF TEAMWORK FACTORS TO PERCEIVED SUCCESS OF INTERAGENCY COLLABORATION

Leslie W. Jones, Ed.D.

The College of William and Mary in Virginia, December 1986

Chairman: Dr. F. Douglas Prillaman

The purpose of this study was to determine the relationship of teamwork factors to perceived success of interagency collaborative.

Administrators (n=375) of eight governmental service agencies, state and local, serving handicapped children, ages birth through twenty-one (21), in Virginia responded to the researcher's mailed survey. The survey instrument was validated with 20 graduate students and 4 national experts in interagency collaboration. A telephone follow-up on certain items in the survey with 26 randomly selected respondents resulted in a significant reliability coefficient (Spearman Correlation Coefficient of .9307). The survey collected, in addition to certain demographic data, information on the perceptions of agency personnel regarding successful interagency collaboration and the perceived existence of teamwork factors. Multiple correlation and regression was used to produce a linear combination of independent variables (perceived existence of teamwork factors) which correlated (p<.05) with the dependent variable (perceived level of success in interagency collaboration).

The major findings of this study were: 1) administrators perceived that teamwork factors make a significant contribution toward success in interagency collaboration, yet, it is their perception that these teamwork factors are not as evident in their interagency contacts with other agency personnel. 2) A relationship did exist between the perceptions of agency personnel as to the level of success in interagency collaboration and their corresponding perception as to the level of existence of teamwork factors; 3) Top and low level personnel within agencies did agree on the perceived level of success in interagency collaboration; 4) There was substantial agreement between the agencies on the perceived level of contribution each teamwork factor makes toward successful interagency collaboration; 5. Problem-solving ability and communication appear to be the two teamwork factors which best predicted the level of perceived success of interagency collaboration; 6) Trust appeared as a factor which differentiated between certain agencies as well as between state and local agency personnel. Local agency personnel did not identify trust as being as important as the other four factors, while three agencies did not view it as important; 7) Local level agency personnel did not identify leadership as being as important as the other four factors.