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AN ORGANIZATIONAL ANALYSIS OF DISASTER RESPONSE:
A STUDY OF RELIGIOUS ORGANIZATIONS

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the Graduate
School of The Ohio State University

By
Martin Henry Smith, B.A., M.A.

****

The Ohio State University
1977

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ACKNOWLEDGEMENTS

As is true of any social action, this paper was influenced by many individuals other than myself. It is here that I would like to recognize those most important for the completion of this paper.

For the past eight years Carol, my wife, has provided the support necessary for the completion of this study, and it is to her that I dedicate this dissertation.

My parents also played an important role in supporting my early college years which provided me with the necessary college background to complete my graduate studies.

My professional and academic growth at The Ohio State University was most influenced by my working at the Disaster Research Center under the Co-Directors E. L. Quarantelli and Russell R. Dynes. Professor Quarantelli, my advisor, first suggested studying church activities in disaster and provided me with the support and intellectual guidance necessary to complete this study. Professor Dynes, because of his expertise in the sociology of religion, also gave some much needed guidance. Although Professor Seidler is not connected with DRC, his careful reading and excellent comments strengthened this study and helped me to deal with many unforeseen problems.

Many of my colleagues, especially Alex Ross, Joseph Wright, and Joel Eigen, also played indispensable roles in helping me to begin and complete this task. Finally, I would like to thank Betty Hilt, who typed the many preliminary drafts of this paper, and Gretchen Cox, who edited the final draft, for their outstanding assistance.
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TABLE OF CONTENTS

ACKNOWLEDGEMENTS ................................................................. ii
VITA ......................................................................................... iii
LIST OF TABLES ..............................................................................
LIST OF FIGURES ...........................................................................

Chapter

I. INTRODUCTION ............................................................................ 1

The Research Problem ...................................................................... 1
Location for the Study ....................................................................... 2
Inception of the Study ....................................................................... 3
The Xenia Tornado ........................................................................... 4
Involvement in the Study ................................................................... 5
An Exploratory Study: Wilkes Barre, Pennsylvania ....................... 6
Significance of this Study ................................................................. 9
Outline of the Study ....................................................................... 11

II. CHURCHES AND DISASTER ....................................................... 13

The Church and Community Disaster Response ........................... 13
Church Disaster Role ....................................................................... 15
Local, Personal Relief ...................................................................... 16
The Organization of Volunteers ....................................................... 17
The Convergence of Material Aid .................................................... 18
Meeting Unmet Needs .................................................................... 19
Summary .......................................................................................... 20

III. AN ANALYTICAL FRAMEWORK OF CHURCH RESPONSE TO DISASTER . 22

The Church as an Organization ....................................................... 22
Open System Approach .................................................................... 23
Organizational Functioning ............................................................. 24
Demands .......................................................................................... 28
Capabilities ...................................................................................... 29
Context .............................................................................................. 32
Conditions ........................................................................................ 32
Disaster Impact and Organizational Functioning .......................... 33
Disaster Response Defined .................................................................. 35
Determinants of Church Response to Disaster .................................... 36
Pre-Disaster Capabilities ................................................................. 37
Normative/Structural Characteristics .............................................. 37
Denominational Characteristics .................................................... 38
Church Characteristics ......................................................................... 40
Characteristics of Pastor's Role ..................................................... 43
Member Participation and Interaction ............................................... 44
Resources .......................................................................................... 45
Congregational Resources ............................................................... 46
The Pastor as a Resource ................................................................... 47
The Membership as a Resource ...................................................... 48
Denominational Resources .............................................................. 50
Demands ............................................................................................ 50
Post-Disaster Conditions ................................................................... 51
Summary ........................................................................................... 52

IV. METHODOLOGY ............................................................................. 58

The Research Site ............................................................................... 58
Data Collection Techniques .............................................................. 59
The Local Church Questionnaire ...................................................... 59
The Sample ......................................................................................... 61
Measurement of Denominational Characteristics ............................. 64
Data Analysis ...................................................................................... 65
Composit Measures ............................................................................ 65
Significance Tests ............................................................................... 66
Measures of Association .................................................................... 66
Multivariate Analysis .......................................................................... 67
Summary ............................................................................................ 69

V. FINDINGS ....................................................................................... 71

Church Disaster Response .............................................................. 71
Normative/Structural Capabilities and Church Response ................. 75
Denominational Characteristics ...................................................... 75
Church Characteristics ........................................................................ 79
Pastoral Role ....................................................................................... 82
Member Participation and Interaction Capabilities and Church Response ........................................................................ 84
Resources and Church Response ...................................................... 88
Congregational Resources ............................................................... 88
Pastor as Resource ............................................................................. 91
Congregation Members ................................................................... 93
Denominational Resources .............................................................. 95
Evaluation of Outside Aid ............................................................... 98
Disaster Demands and Church Response ........................................ 101
Regression analysis .......................................................................... 106
VI. SUMMARY AND CONCLUSIONS ................................... 113
   Introduction .............................................. 118
   Findings .................................................. 119
   Evaluation of the Framework ............................ 123
   Methodological Problems ................................. 132
   Significance of the Findings ......................... 134
   Topics for Future Research .............................. 142

APPENDIX
   A THE QUESTIONNAIRE .................................. 145
   B OPERATIONALIZATION OF VARIABLES ................ 157

BIBLIOGRAPHY .................................................. 162
# LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Members of the National Council of Churches in Christ</td>
</tr>
<tr>
<td>2</td>
<td>Average Disaster Response Score by Questionnaire Response Time</td>
</tr>
<tr>
<td>3</td>
<td>Questionnaire Response Rate by Denomination</td>
</tr>
<tr>
<td>4</td>
<td>Emergency Recovery Activities During the Week Following the Tornado</td>
</tr>
<tr>
<td>5</td>
<td>Recovery Activities Since the Week Following the Tornado</td>
</tr>
<tr>
<td>6</td>
<td>Distribution of Community Church Response</td>
</tr>
<tr>
<td>7</td>
<td>Distribution of Member Church Response</td>
</tr>
<tr>
<td>8</td>
<td>Correlations Between Denominational Characteristics and Disaster Response</td>
</tr>
<tr>
<td>9</td>
<td>Correlations Between Normative/Structural Church Characteristics and Disaster Response</td>
</tr>
<tr>
<td>10</td>
<td>Correlations Between Pastoral Normative Characteristics and Disaster Response</td>
</tr>
<tr>
<td>11</td>
<td>Correlations Between Member Participation and Interaction and Disaster Response</td>
</tr>
<tr>
<td>12</td>
<td>Correlations Between Congregational Resources and Disaster Response</td>
</tr>
<tr>
<td>13</td>
<td>Correlations Between the Pastor as a Resource and Disaster Response</td>
</tr>
<tr>
<td>14</td>
<td>Correlations Between Members as Resources and Disaster Response</td>
</tr>
<tr>
<td>15</td>
<td>Correlations Between Denominational Resources and Disaster Response</td>
</tr>
<tr>
<td>16</td>
<td>Correlations Between Importance of Sources of Aid and Disaster Response</td>
</tr>
<tr>
<td>17</td>
<td>Correlations Between Disaster Demands and Disaster Response</td>
</tr>
<tr>
<td>18</td>
<td>Variables with Strongest Association with Emergency Community Disaster Response</td>
</tr>
<tr>
<td>19</td>
<td>Variables with Strongest Association with Long-Term Community Disaster Response</td>
</tr>
<tr>
<td>20</td>
<td>Multiple Regression Analysis of Variables Predicting Emergency Church Response</td>
</tr>
<tr>
<td>21</td>
<td>Multiple Regression Analysis of Variables Predicting Long-Term Church Response</td>
</tr>
</tbody>
</table>
Multiple Regression Analysis of Variables Predicting Emergency Church Response Excluding Membership in XAIFC

Number of Significant Associations with Church Disaster Response by Component of the Demand-Capability Model
## LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Types of Organizational Behavior in Disasters</td>
<td>14</td>
</tr>
<tr>
<td>2</td>
<td>Direct Determinants of Organizational Functioning</td>
<td>25</td>
</tr>
<tr>
<td>3</td>
<td>Determinants of $T_1$ Demand-Capability Balance and Organizational Characteristics</td>
<td>26</td>
</tr>
<tr>
<td>4</td>
<td>General Determinants of $T_2$ Organizational Functioning</td>
<td>26</td>
</tr>
<tr>
<td>5</td>
<td>The Analytical Framework</td>
<td>27</td>
</tr>
</tbody>
</table>
CHAPTER I

INTRODUCTION

The Research Problem

It is the purpose of this study to develop and test socio­logical hypotheses regarding the explanation of the activities of religious organizations following disaster. This explanation of church disaster activities will use an organizational framework which emphasizes both a high degree of continuity between pre­disaster and post-disaster functioning and an organizational adaptation to contextual changes which occur as a result of disaster impact. This framework first places the organization within the larger socio-cultural context which has influenced the development of the organization prior to the disaster. As a result of this context the organization has developed a set of normative, structural, and resource capabilities to meet a particular range of demands for services. A balance between organizational demands and capabilities is assumed to exist with the continued functioning of an organization. Prediction of ongoing organizational functioning is closely linked to a knowledge of the current demand-capability ratio.

However, when disaster strikes, the framework assumes that post-impact socio-cultural conditions are generated which disrupt the relatively balanced demand-capability ratio which determines organizational functioning. These post-impact conditions may affect factors outside an organization's boundaries such as customers, suppliers, competitors, and regulatory groups. These same disaster conditions may affect the internal dynamics of an organization such as its characteristics and resources. As a result of the drastically changed conditions a new demand-capability balance evolves and a change in organizational functioning emerges.

Because the analytical framework assumes a great deal of continuity between pre-disaster and post-disaster functioning those specific elements of the demand-capability ratio found in the literature to be associated with high levels of organizational functioning during normal circumstances will be important predictors of organizational functioning in disaster. The disaster literature also provides an understanding of other disaster-relevant elements of the demand-capability ratio which have been found to be specifically
associated with organizational functioning in disaster. This study tests the relationship between both disaster and non-disaster elements of the demand-capability ratio and organizational functioning in disaster.

**Location for the Study**

This study tests hypotheses derived from the demand-capability framework by studying the relationship between organizational characteristics and disaster activities of churches in Xenia, Ohio, a community severely damaged by a tornado on April 3, 1974. Xenia is a small city (population 27,000 in 1974) which serves as the county seat of rural Greene County (population 125,000). According to Ross (1976), Xenia is a "bedroom community" since it possesses only a small amount of industry and 25 per cent of its work force commutes to Dayton, Ohio, located 15 miles away. He found the composition of the work force to be quite similar in profile to that of the United States as a whole.

Regarding other social characteristics of the community prior to the tornado, Ross (1976) found that the median family income of Xenia was slightly higher than the national average, although there were fewer families with annual incomes above $15,000. He found the racial composition of Xenia only slightly over-represented blacks as compared to the national average. The age composition indicated more younger persons and fewer persons over the age of sixty-five than the entire nation.

Within Greene County in 1974 there were approximately 35 different denominations represented by 138 churches. Thirty-five per cent of these churches were situated within the city of Xenia. Compared to the nation as a whole, the composition of the denominations tended to overrepresent the conservative and fundamentalist, protestant theologies, with a number of Catholic churches and no Jewish synagogues. Half of the churches were Baptist, Methodist, Pentecostal, or Churches of Christ. There was no Council of Churches in Xenia, although some influence was felt from the Metropolitan Churches United (MCU), the ministerial association of the Dayton metropolitan area.

In order to test the analytical framework it was necessary to determine the pre-tornado characteristics of each Greene County church, the impact the tornado had on each congregation, and the type of disaster response, both emergency and long term, that each church developed. Using these three broad types of information the specific hypotheses were tested.
To obtain this information several data collection techniques were used. General background information was obtained by reading media reports of the damage and activities of churches. In depth interviews were also conducted with the pastors of five churches known to be active in disaster activities. In addition, sixteen months after the tornado a questionnaire was mailed to all pastors of Greene County churches. This questionnaire was designed to provide specific information regarding the pre-disaster characteristics, the effects of the tornado and the post-tornado activities of each church. A limited amount of information regarding the denominational characteristics of churches was obtained using the 1970 and 1975 editions of the Yearbook of American and Canadian Churches. Using these two sources current denominational characteristics as well as trends in these characteristics could be determined. These combined sources of data were used to test the relationship between church disaster activities and elements of the pre-disaster demand-capability balance and post-disaster conditions.

Inception of the Study

The present study grew out of an interest in several topics in sociology. The first is the relationship between organizational structure and organizational functioning. The organizational literature is filled with studies relating specific structural elements to different types or levels of organizational functioning. Theoretically, if one knows the characteristics of an organization's structure it should be possible to predict its ability to perform a variety of tasks even though the organization is not currently expected to do so.

The second topic is the applicability of organizational theory and research to understand churches. Until recently church structure has typically been analysed using the church-sect typology. However, along with the convergence trends found in other sociological sub-areas (Dynes and Quarantelli, 1968) there are several writers (see for example Moberg, 1964; Harrison, 1959; Snook, 1974; Wood, 1966, 1970, and 1972; Benson and Dorsett, 1971; and Davidson, Schlanger and D'Antonio, 1969) who have used the organizational approach to study churches.

The disaster sub-area provides an interesting situation in which to combine these two topics. Can the disaster activities of churches be explained using organizational characteristics? The Xenia tornado provided the actual research site.
The Xenia Tornado

On April 3, 1974 a major severe weather system developed in the Midwest resulting in many tornadoes. Associated with this storm were winds of more than 250 miles per hour. A double funnel cloud descended and entered the southwest section of Xenia. After destroying several hundred single story homes in the Arrowhead subdivision the funnel headed toward the center of downtown Xenia, destroying schools, churches, and many buildings in its path. Continuing through the city, the tornado destroyed several blocks of the business district, devastated more schools, and extensively damaged another residential area before it exited the city. Its path through the city spared Xenia's hospital by only a few blocks. After leaving Xenia the tornado proceeded on into Wilberforce where it destroyed eighty-five per cent of the campus structures of Central State University (Taylor, Ross, and Quarantelli, 1976: 48-49).

Physical damage as a result of the tornado was extensive. Thirty three persons were killed and approximately 1,200 persons were injured. In addition, about 1,140 homes were destroyed, as were almost 160 commercial and industrial businesses. As a community, five per cent of Xenia's population was injured, 25 per cent of the housing was destroyed, and half of the schools and businesses were devastated. Conservative estimates of the dollar loss of the city are around ninety million dollars (Taylor, Ross, and Quarantelli, 1976:50).

The churches also experienced extensive damage. Approximately 25 per cent of the 64 churches in the Xenia area were totally destroyed. Another 25 per cent suffered some damage.

Many emergency organizations in the area responded to the disaster. The Xenia fire department was aided by some 30 other units from nearby fire and rescue organizations with its search for victims. Greene County Memorial Hospital treated 468 victims during the first 12 hours and more than 250 more during the next 18 hour period (Taylor, Ross, and Quarantelli, 1976:49). The Red Cross set up several emergency facilities which offered food and shelter for tornado victims. Even the National Guard was activated to control the expected influx of sightseers and looters (Ross, 1976:31). Despite the severity of the tornado impact, "search and rescue efforts were relatively quick and effective" (Taylor, Ross, and Quarantelli, 1976:49).
Involvement in the Study

Because of its close proximity to the tornado area, the Disaster Research Center (DRC) had a three member research team in Xenia within four hours after the tornado impact. During that first night the research team observed the emergency response of the community. Initial attention was focused on the overall coordination of community emergency activities, with particular attention being paid to traditional disaster-relevant organizations, such as the local hospital, the police and fire departments, civil defense, city and county government agencies, and the Red Cross. In addition, DRC field teams also studied the emergence of an ecumenical disaster recovery organization and conducted a massive investigation of the delivery of mental health services. In conjunction with these studies DRC staff conducted hundreds of open ended, in depth interviews, observed many of the emergency and long-term recovery activities, examined tornado related documents, and distributed several questionnaires to different groups in the community.

During the initial study of the overall community response to the tornado it became evident that churches had played, and were continuing to play, an important role in the disaster activities of the community. One church contacted had provided the space for one of the Red Cross shelters in Xenia. Another pastor indicated that the key to his church had been given to the hospital administrator so that their building might be used by the hospital if the need arose. Another pastor told how his church building was changed from its use as a day care center at the time of the tornado to an emergency shelter for people in the neighborhood. The next day it was declared unsafe and closed.

Newspapers also provided another source of information regarding church activities. The Xenia paper had stories of churches being active in providing food, clothing, furniture, household items, money, childcare services, and counseling. Churches also organized and coordinated volunteers from within and outside the community who helped city and rural residents clean up their property. A Disaster Church Fund was collected to help congregations rebuild damaged facilities. Spiritual concerns were also met by hymn sings and church services which were often held in alternate meeting places. Both the interviews and newspaper articles indicated that churches in Xenia were active in a variety of disaster recovery activities.

Despite this high level of activity reported by pastors and newspaper articles it was apparent that not all churches were equally involved in disaster recovery activities. This
differential response by Xenia churches suggested the possibility that the involvement of specific churches in disaster recovery activities might be predicted using some characteristics of the church. Some of the specific church characteristics had already been suggested by an earlier study of churches conducted in Wilkes Barre, Pennsylvania.

An Exploratory Study: Wilkes Barre, Pennsylvania

A more in depth understanding of the differential responses of individual religious organizations is provided by an exploratory study, conducted by the Disaster Research Center, of church and synagogue activities in Wilkes Barre, Pennsylvania following the flood associated with Hurricane Agnes in 1972. To study these activities, nine interviews, lasting between one and two hours, were conducted with ministers of community churches and leaders of Jewish organizations. Although no systematic sampling procedure was utilized there was an attempt to include congregations in several denominational groups. The questions were designed to determine what types of activities and services their congregations provided, who were the recipients of these activities, and how these congregational activities were organized.

The findings of this study reveal a differential response to the flood by community church congregations. While some individual congregations performed a broad range of relief activities for both members and non-members, other congregations limited both the type of relief programs organized as well as those eligible for receipt of the assistance. Still other congregations did nothing at all.

A United Methodist church provides a good example of an active church. Because it was situated in the downtown area, this moderate to small size church was severely flooded as were many of the congregation members. It received substantial amounts of aid from the Methodist Conference and participated extensively in relief programs which served both congregation and community members.

The Jewish Community Center had a profile similar to the Methodist church except that it was larger and served only members of the Jewish faith. It provided money, referrals to community disaster agencies, low income housing for the elderly, $25,000 business loans, day camp, building estimates, contracting services, social counseling services, and student aid loans and gifts.
Taking into consideration the characteristics of the churches studied it appeared that there were predictable patterns. To begin, distance from the disaster area appeared to be related to disaster response. All but one of the flooded churches organized several types of disaster activities. Moving farther from the damaged area, churches that were not flooded tended to be active in fewer types of activities for shorter periods of time. Often they simply contributed to combined denominational programs.

The extent of damage to church facilities and to congregation members also appeared to be positively related to church response. Despite the fact that both the church facilities and members’ property were severely damaged, both types of damage appeared to result in more active church disaster response. A Presbyterian church which had most church and member’s facilities damaged developed a very active program. A Polish National church and an Assembly of God, both on the fringe of the flooded area, suffered little church and member damage and had little involvement in disaster relief.

This study also suggested that congregational and denominational resources played an important role in determining church disaster response. Small churches, regardless of damage and location, tended to have little involvement in disaster relief. For example, a small African Methodist Episcopal church that was badly flooded and also had most of its members hit developed almost no disaster response. It received no aid from its denomination, although the local United Methodist Conference gave it some assistance. Except for the Polish National church and the Assembly of God, which also did not develop a strong disaster response, all of the other churches received significant amounts of aid from their denomination. The Jewish Community Center and the Catholic, Methodist, Lutheran, and Presbyterian Churches all provided strong unified support for needy congregations.

Finally, it appeared that there was a great deal of continuity between the pre-disaster and post-disaster activities of churches. Those churches most involved in disaster activities appeared to have been heavily involved in the community prior to the flood. For example, before the flood the United Presbyterian church had participated in the Meals-on-Wheels program, the Y.M.C.A., the City Manager Government Committee, a campus ministry program to Wilkes College, and other community programs. This church was also more involved in disaster recovery than most churches. Those churches having almost no involvement in disaster activities also appeared to be less involved in the community before the flood.
One unique finding of this study is the existence of combined relief programs. Soon after the flood the Methodist, Lutheran, and Catholic churches developed unified relief programs which enabled individual congregations to participate in flood relief activities without developing their own programs. The United Presbyterian Church also developed an extensive relief effort for its churches (see Martin, 1976).

Several months later the resources and enthusiasm for these separate congregational and denominational activities dwindled, leading to the discussion and organization of an ecumenical disaster relief organization named the Wilkes Barre Inter-Faith Council. This organization enabled churches with insufficient support to initiate their participation in a disaster relief program and those churches experiencing a decline in support for their current programs to become or remain active in disaster relief (see Ross and Smith, 1974).

In spite of the founding group's good intentions, the development was slow and labored. Disagreements occurred over control, amount of funding, and when to stop the program. The program, however, was finally established and showed many strengths. "Need cards" were distributed in the community and resources were allocated to the needs on the basis of priority. Both human and material resources were allocated, as needed, to the entire community. Governmental and industrial organizations were found to be willing to deal with one large organization rather than dealing with each church individually. Even after its activities were fully developed this organization was not incorporated until three or four months later. However, despite its problems, the Wilkes Barre Inter-Faith Council continues to function meeting the needs of the poor in the community.

There are two significant findings of this study. First, all churches were not equally involved in disaster relief. There were definite differences in the types of relief programs developed and the range of people served by these programs. Secondly, it appears possible to locate factors associated with the differences in relief programs. The explanatory factors suggested by this study include:

- distance to disaster area
- previous community involvement of congregation
- extent of damage to congregation members
- extent of damage to church facilities
- congregational resources
- denominational resources
These six factors found important by this exploratory study, while in no way conclusive, do indicate that it may be possible to utilize an approach similar to those developed to explain the disaster activities of other types of organizations. Previous studies have utilized organizational demands and capabilities (Haas and Quarantelli, 1964) and/or the organizational context and immediate conditions (Taylor, 1976) to understand and explain the disaster activities of organizations. An actual test of the ability to explain church disaster activities requires the development of an analytical framework based on previous organizational studies and the development of an empirical test of the framework using religious organizations in a disaster situation. Such a test is the focus of the remainder of this dissertation.

Significance of this Study

This dissertation is significant for several theoretical and sociological reasons. To begin, this study is one of a few sociological studies of the disaster activities of local church congregations. As will be pointed out, churches are an important element in community disaster response. However, studies up to the present (see, for example Ahler and Tamney, 1964; Davis, 1970; Dynes and Yutzy, 1965; Moore, 1958; and Martin, 1976) are very superficial descriptions of church activities with no attempt made at understanding the level of involvement and differential response of individual church congregations in an entire community. This study will provide a comprehensive inventory of the activities of Greene County churches following the tornado.

In addition to having little descriptive information regarding church activities, there also exists no information regarding the specific factors associated with an active church disaster response. Since it is assumed that much social behavior is patterned it is expected that those church characteristics associated with church recovery activities can be determined. This study will provide the information necessary to determine those relationships.

This study is also important as an addition to the development of models of organizations in disasters. Dynes (1974:51) criticised earlier models of organizations in disaster because they were based on stable, formalized organizations with limited objectives. Brouillette and Quarantelli (1971:44) urged for further development of organizational analysis, suggesting that factors such as community and societal contexts in which the organization functions should also be included. Haas and Drabek
have furthered this development with their work on the demand-capability model of organizational functioning. Parts of this model have been frequently used to understand organizational functioning under stress following disasters (for example see Quarantelli, 1966; Adams, 1969; Forrest, 1972, and Dynes, Quarantelli, and Kreps, 1972). Recently Taylor (1976) has made extensive use of this approach by combining it with a collective behavior perspective and analyzing an emergent system response to disaster. Because it uses many of these same ideas this study can serve to support the further use of these existing paradigms or provide the information necessary to change them. Although not replicating any earlier studies, this study will test elements of the demand-capability model using a different community, a different type of disaster, and a different type of organization than previous studies.

Another significant aspect of this study is that it provides more quantitative information on more variables for more individual organizations than do most previous studies of disaster organizations. While a quantitative study such as this is not without problems, it does provide a broader understanding of more variables than does a single case study. Churches are among the few types of disaster organizations which have more than one organization active in a single community. This quantitative approach allows for the determination of both the importance of each individual variable and its relative importance compared with other variables.

In addition to paralleling previous studies of disaster relevant organizations, this organizational study of churches also furthers a recent trend within the sociology of religion which focuses on the congregation as an organization. In the past, a large proportion of such studies have been of only limited value because of their conceptualization within a "Church-Sect" frame of reference. However, recent writers have called for the formulation of a new conceptual scheme of religious organizations which:

1) takes account of the variety of religious organizations present on the contemporary American scene;
2) contributes to the linkage of religious organization studies with the more general field of formal organization studies; and 3) provides for the generation of new and promising hypotheses regarding religious organizations (Benson and Dorsett, 1971:138).

Although this dissertation is not totally unique in its organizational perspective (see for example Moberg, 1964; Harrison, 1959; Snook, 1974; Wood, 1966, 1970, and 1972; Benson and Dorsett, 1971; and Davidson, Schlangen and D'Antonio, 1969) it is hoped that
deviation from previous parochial approaches to religious organizations through the application of theory from other areas of Sociology will aid both through the better understanding of the disaster response of churches and in the development of organizational theory of religious organizations.

Outline of the Study

The remainder of this study will proceed according to the following outline. Chapter 2 will present a discussion of the current status of the literature regarding churches and disasters. It will begin with a discussion of how churches are conceptualized as part of organized behavior in disasters. The actual church disaster role will be discussed. Finally, it will indicate how church response is an integral part of the overall community disaster recovery effort.

Chapter 3 will present the theoretical perspective that will be used in this study. It will begin by discussing the importance of the organizational and open systems approach of this study. This will be followed by the development of an analytical framework to explain organizational functioning during normal times and disaster situations. Finally, the specific characteristics which are expected to predict church disaster response will be discussed.

The fourth chapter will present a discussion of the methodological techniques used. It will begin by indicating why Xenia is an appropriate research site for this study. The data collection techniques, including the local church questionnaire, the sample, and denominational statistics used will be discussed. Finally, the specific data analysis techniques will be presented.

The next chapter will present the findings of the study. It will begin with a brief discussion of church disaster activities. This will be followed by a presentation of the findings for each component of the analytical framework. To summarize these findings, the results of the multivariate regression analysis will be presented and each of the significant, independent determinants of church disaster response will be discussed.

Chapter 6 will conclude this study. In it will be found a further discussion of the findings, an evaluation of the framework, and a discussion of the methodological problems of the study. This will be followed by a discussion of the significant theoretical and practical aspects of the study and will conclude with a presentation of topics for future research.
1. Interviews were conducted with pastors or leaders of the following religious groups: African Methodist Episcopal Church, Assembly of God, Catholic Church, Jewish Community Center, Lutheran Church, Salvation Army, Polish National Church, United Methodist Church, and United Presbyterian Church.

2. See Martin (1976) for a study of the activities of the United Presbyterian Church following the Wilkes Barre flood and Ross (1976) for a study of ecumenical disaster recovery organizations.
CHAPTER II

CHURCHES AND DISASTER

In this chapter the current status of the literature on the response of religious organizations to disasters will be explored. It will include a presentation of the general understanding of church disaster activities and how this is linked with the general conceptualization of organized response to disaster. Finally, a discussion of the church disaster role will follow, emphasizing the church's ability to provide local, personal relief, to organize volunteers, to collect material aid, and to meet unmet needs and showing how important church activities are to the overall community response.

The Church and Community Disaster Response

In the past, studies of community disaster and disaster recovery have tended to ignore the activities of religious organizations. Interest has focused on other community organizations, such as, police, fire, Civil Defense, Red Cross, etc., which have regular pre-disaster tasks that are the same or similar to the tasks which they perform following disaster impact. The Salvation Army, which is widely discussed in the disaster literature (Form and Nosow, 1958; Ross, 1970), is one major exception to this trend. However, this is due to the fact that the Salvation Army is found to have a social welfare orientation rather than a religious orientation (Ross, 1970:4). The active involvement of the Salvation Army in everyday "disasters" and its planning for large community disruptions has added the Salvation Army to the list of disaster relevant organizations. Churches, if discussed at all, are briefly mentioned along with other miscellaneous relief agencies.

A major reason for the lack of interest given to religious and other similar organizations may be that the conceptual schemes used in studying organized behavior in disaster in the past tended to focus on organizations which had formal legal mandates to perform disaster tasks which were continuous with pre-disaster tasks. Recently, however, the conceptualization of organized behavior in disaster has been expanded by Dynes (1974) to include
organizations which, following disaster, perform tasks and develop structures that are different from their pre-disaster tasks and structure. In his conceptualization Dynes classifies organizations on the basis of both the nature of the disaster tasks and the post impact structure which these organizations develop (see Figure 1).

<table>
<thead>
<tr>
<th>Tasks</th>
<th>Regular</th>
<th>Non-regular</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structure</td>
<td>Old</td>
<td>Established Extending</td>
</tr>
<tr>
<td></td>
<td>New</td>
<td>Expanding Emergent</td>
</tr>
</tbody>
</table>

(Dynes 1974:138)

Figure 1. Types of Organizational Behavior in Disasters

Using this scheme, most religious organizations are classified under the heading of extending organizations since they are "extending their activities into new but unexpected functions for them during the emergency period" (Dynes, 1974:145).

In his discussion of extending organizations, Dynes further subdivides them into emergency-relevant and community-relevant organizations. Churches are placed in the community-relevant category and are conceptualized as

group volunteers; their participation and their activity during the disaster are the result of their predisaster group membership. Most of these groups have a locality base; a regular meeting time; and, as a result of participation over time, close impersonal ties. Since many of the members have not been in the impact zone and their regular occupational activities have been suspended, most of them are free to participate in disaster activities and are unencumbered by possible conflicts. They are motivated to help and only through organizational participation can they do this effectively. After organization officials have been assigned tasks, the organization is mobilized and initiated its activities. The voluntary group, although it has
a predisaster structure, tends to be more amorphous than the contractual type group. There may be officers and members but such a division seldom has relevance to the tasks members find themselves doing (Dynes, 1974:160).

However, in addition to simply clarifying the conceptualization of extending organizations, it is also necessary to discuss the actual role played by religious organizations and to indicate the linkage to, and importance of this role for the disaster relief functions and activities of the community as a whole.

**Church Disaster Role**

Despite the fact that churches are rarely included in community disaster plans, churches generally have been recognized as having the potential for playing an important disaster role. In line with basic Christian values of brotherhood, altruism, self-sacrifice, and help to those in need, the disaster literature indicates that community churches are typically involved in activities centered around these values. In the most comprehensive study to date on activities of churches, Moore (1963) reports that churches are involved in recovery activities at all stages of the disaster. During the emergency period religious groups provide basic necessities (food, clothing, shelter) to both victims and workers. During the rehabilitation phase activities are expanded to include the collection and distribution of food, clothing, money, furniture, and other physical gifts and the provision of many needed services. During this same time period Moore reports that regular church activities are expanded to include special services, prayers, and, in one instance, increased evangelical activities. The activities of the clergy are also expanded to include the planning and implementation of relief activities, funerals, home visits, increased counseling loads, and the interpretation of the disaster to their congregation. Specific elements of this church disaster role have been given only limited coverage at the descriptive level (see Ahler and Tamney, 1964; Dynes and Yctzy, 1965; Davis, 1970).

Recently Martin (1976) conducted a study of the activities of the United Presbyterian Church in the USA in Wilkes Barre following the 1972 flood. His study included case studies of seven damaged churches as well as the presbytery, the synod, and the General Assembly. Focusing primarily on the response to restore church facilities and help some member families, Martin found a great deal of stability between pre-disaster and post-disaster tasks and relationships. When changes did occur they were inter-
interpreted as accelerations of changes in progress and most temporary adaptations were consistent with predisaster traditions. Finally, the importance of aid received from all judicatory levels was shown to be important.

In addition to focusing on the role or religious organizations as an isolated aspect of community disaster response, the church role can also be shown to be closely linked to the community response through a discussion of 1) the importance of local, personal relief activities, 2) the organization of volunteers, 3) the convergence of donations, and 4) the meeting of unmet needs. This linking of the church role to the overall community response will also further specify the domain of religious organizations following disaster.

Local, Personal Relief

To begin, churches play an important disaster role by providing local, personal relief. It has been widely discussed in the literature that there are a number of disaster needs for which disaster-stricken populations have demonstrated a consistent preference for private and informal assistance over public and formal assistance, even when the latter may be more objectively adequate than the former. For example, Rosow (1954:466-467) found, regarding the searching for aid, that victims look first to family members, intimate friends and relatives; secondly, to other friends and neighbors; thirdly, to anonymous community members and to various membership associations (such as unions, employers, church groups, etc.); fourthly, to the most familiar public and quasi-public organizations, especially the newspapers, radio, police and such institutions as community hospitals; and only finally, to the public institutions specifically set up to deal with victims' problems of relief, welfare, reuniting separated families, etc. Churches, therefore, are one of the first organized sources of aid to which the victims look for help.

In addition to churches being sought out early as sources of disaster relief they are also more highly evaluated than the relief activities of similar outside agencies such as the Red Cross. Local organizations, such as the Salvation Army, gain the image of "working with people of their own kind, giving immediate physical and spiritual aid 'without asking questions'" (Form and Nosow, 1958:185). In contrast Red Cross policy states that "no one shall be helped in rehabilitation unless he clearly demonstrates his need and his inability to meet that need from his own resources" (Moore, 1963:180). Regardless of whether this difference is due to the outside or bureaucratic nature of
organizations such as the Red Cross or other reasons discussed in the literature (see Moore, 1963:176-181; Adams, 1970), the fact remains that churches are a preferred source of emergency disaster relief.

The Organization of Volunteers

Churches also can, and do, play an important role in the organization of volunteers. The convergence of large numbers of volunteers has been a general finding of studies of disaster (Fritz and Methewson, 1957). This finding can be accounted for by the fact that there are many segments of the community which temporarily become irrelevant during a widespread disaster so that persons who normally are engaged in these non-essential tasks are free to provide volunteer assistance (Dynes, 1972). Accompanying this release from pre-disaster tasks is the expansion of the citizenship role to where an individual will want to do anything to help the community.

The result, in most disaster situations, is the major problem of a flood of volunteers who are ready and willing to help, combined with the rather universal inability of organizations to utilize them effectively. Many organizations, including police, fire, and even Red Cross, do not use untrained volunteers to any great extent.

There are times when most emergency organizations will be the recipients of offers of assistance by local volunteers. However, because the quantity and quality of volunteer help is very problematic in any given disaster, it is wise for organizations not to make their possible availability an integral and central part of emergency planning. Even when they appear in large numbers, volunteers can be more trouble than they are worth, especially if there has not been effective pre-planning (Dynes, 1972:33).

Given the absence of an organized setting for the performance of voluntary activities it becomes increasingly unlikely that volunteers will become involved in recovery activities. Shaskolsky (1967), for example, indicates that, given the conditions of modern life, concerted efforts to alleviate suffering or to promote altruism or volunteerism can be anticipated only when the institutional means of giving effect to it are applied. Persons who actually do participate during the early emergency period as non-organized volunteers gradually find themselves defined by
local residents and emergency organization members as "sightseers" or "looters."

In contrast to the negative or problematic nature of unorganized volunteers, the activities of organized volunteers have been found to become gradually integrated into an emergent organizational system (Form and Nosow, 1958:230). This pool of volunteers, therefore, can become either a resource or a problem, depending on how well they are integrated, through some organized effort, into the overall community response. As we have already seen in both Dynes' conceptualization of community relevant extending organizations and the discussion of the disaster role of religious organizations, churches are well suited to the role of providing the necessary vehicle for organizing volunteer relief efforts.

The importance of the role of organizing volunteers gains strength when one considers the pool of volunteers available to religious organizations. Simply considering numbers, although Americans have been characterized as a nation of "joiners," churches are the only type of organization to which a majority of Americans belong: church activity is the dominant type of participation in voluntary associations. For several decades, church membership has increased both numerically and as a percentage of the population (Main, 1967). The make-up of church members is also significant to the type of potential volunteers with over 90% of community influencers identifying themselves as church members. Two-thirds of these also attend more than two-thirds of the services (Mitchell, Schriner, and Lafontaine, 1970). These findings indicate that churches are an important potential source of volunteers.

The Convergence of Material Aid

Closely related to the convergence of volunteers is the convergence of money and material goods. The spontaneous generosity and outpouring of unsolicited aid to disaster stricken populations is well documented for every peacetime disaster. However, as with the convergence of volunteers, the convergence of material goods can also be a problem for the community. As Fritz and Mathewson state

the available data indicate that these supplies:

1) normally arrive in volumes far in excess of the actual needs;
2) in large proportion are comprised of unneeded and unusable materials;
3) require the services of large numbers of personnel and facilities which could be used for more essential tasks and functions;
4) often cause conflict relations among relief agencies or among various segments of the population;
5) materially add to the problem of congestion in and near the disaster area; and
6) in some cases, may be disruptive to the local economy (Fritz and Mathewson, 1957:22).

Dynes (1972:23) attributes the convergence of donated goods to the fact that outsiders' judgment of community needs underestimates the basic resources which are still available in most communities. Food supplies, available in households, retail groceries, and wholesale warehouses, are usually sufficient to meet community needs. Medical supplies are available in hospital stocks or by wholesalers within the community. Clothing is generally not needed on a large scale. This is not to imply that donations of money and material are not needed, but rather that community disaster planning should include some consideration for the organization and control of monetary and material donations.

Religious organizations have historically played a major role in the collection and distribution of donations. For example, focusing on the donation of money, Moore (1963) reports that churches in Waco donated more than $42,000 toward recovery. Many other church donations, put directly into a community disaster fund, went directly to other agencies, or simply were not reported. Food, clothing, and other physical gifts poured in by the truckload within hours flowing the tornado from individuals, other churches, and judicatory agencies. Volunteers and offers of volunteer help also poured in. Since much of this aid is needed, and since the convergence of donations is not controlled and continues to be a problem, religious organizations may play an important role in obtaining only needed items in reasonable quantities and coordinating the collection and distribution of these donations through judicatory agencies or church facilities outside and inside the impact area.

Meeting Unmet Needs

The meeting of unmet needs is the final issue linking religious organizations and the overall community response. Despite the existence of extensive, rehearsed community disaster plans, no plan makes allowances for all possible contingencies. Generally, new tasks are created by disaster impact which no
existing local organization has as its responsibility. It is also possible that the capability of an organization to respond to demands clearly part of the organization's domain may have been disrupted by loss or disruption of necessary human and material resources. When high priority demands appear to be neglected during the emergency, organizations with no pre-planned disaster domain may step in to fill the gap (Dynes, 1972:55). In such cases, churches are well suited to provide human and material resources to meet a variety of disaster demands which were never part of the organization's implicit or explicit domain. The ability of churches to meet these unmet needs is a function of their not being locked into a pre-established task domain and not being hindered by a high degree of bureaucratic "red-tape." Religious organizations have repeatedly shown themselves as being able to meet a wide variety of limited demands in short amounts of time.

Up to this point it has been shown that churches have the potential for a well defined disaster role. In addition, this role is of significant importance to the overall community response since 1) victims prefer local, personal relief, 2) churches provide an organizational outlet for volunteer efforts, 3) much of the convergence of donated materials is associated with church relief efforts, and 4) churches are easily adapted to meeting demands neglected by the organized community disaster response. Thus far in the literature the activities of religious organizations following disasters have been treated as a whole, neglecting any variation in the response of churches. In contrast, the organizational and disaster literatures indicate wide diversities in the activities of similar types of organizations in similar situations, attributing this variety to differing characteristics of the organizations. Since it is the purpose of this paper to explain the differences in the response of individual church congregations it will be necessary to shift levels of analysis from looking at the response of the entire religious sector of the community to the study of the activities of individual congregational units.

Summary

To summarize, this chapter focused on the role of churches in disaster. It was stated that the role of church organizations in disaster has been given little attention by both disaster studies and community disaster plans. Some of this lack of attention, it was stated, may be revised by a change in the conceptualization of disaster organizations to include churches and similar organizations. Current studies of church activities in
disaster, which tend to focus on all churches in a community as a unit, were also discussed. Finally, it was shown that churches could be an important element in overall community disaster response because they provide local, personal relief, organize volunteers, handle the collection of material aid, and meet needs unmet by other disaster organizations.
CHAPTER III

AN ANALYTICAL FRAMEWORK OF CHURCH RESPONSE TO DISASTER

In this chapter a testable explanation of the disaster response of individual religious organizations will be developed. To explain the functioning of religious organizations in disaster situations it will first be necessary to develop an analytical framework for the understanding of organizational functioning during normal circumstances (T\text{\textsubscript{1}}). The framework views all organizations as having a demand-capability balance. That is, there demands for services which are met by organizational resources. During normal times the demand-capability balance is seen as the result of both its historical context and immediate conditions. The interaction of these elements results in the characteristics of the focal organization and its resulting activities. The disaster agent alters this balance by affecting many of the contextual elements and by providing a new set of immediate conditions. This changed balance influences both organizational characteristics and organizational activities. Support for this overall framework will be provided using the findings of previous disaster studies.

Having provided a framework for the general understanding of organizational functioning in disasters, the final section will discuss those elements of the demand-capability balance, context, and conditions which, based on their coverage in various sociological literatures, are expected to be associated with the response of religious organizations following disaster. For each major element in the conceptual framework specific factors will be linked with organizational functioning and the direction of their expected impact on church disaster functioning will be stated in the form of a hypothesis.

The Church as an Organization

Preliminary to the development of an analytical framework of organizational functioning, the unit of analysis must first be
defined. The concept of "organization" has been defined by different authors with reference to formal establishment, authority, goals, structure, size, and complexity. However, for the purposes of this research it is useful to follow the definition of Haas and Drabek (1973:8) who suggest that an organization is "a relatively permanent and relatively complex discernible interaction system." This definition emphasizes three major components. First, and most important, organizations are viewed as discernible interaction systems characterized by interdependence and interrelatedness of parts. Second, this interaction system is structurally complex in terms of both horizontal and vertical differentiation. Finally, the system is relatively permanent or stable over time.

This definition has the initial strength that it characterizes a broad range of organizations, including religious organizations. Although churches appear to have little in common with the historical prototype of industrial organizations, religious organizations share the characterization of being relatively permanent and complex discernible interaction systems. Having met the criteria to be conceptualized as organizations it becomes appropriate to utilize organizational theory for the explanation of the activities of religious organizations.

Open System Approach

This definition of organization also provides a conceptual base for the use of an open system approach for explaining the effect of factors external to the organization (i.e., disaster agents) on organizational functioning. The concept of system implies that there is some whole, in this case an organization, that is not understandable by investigation of its parts in isolation (Bertalanffy, 1968). This conception includes not only the integration of these separate internal parts, but also the adaptation to what goes on in the outside world (Lawrence and Lorsch, 1967:248). In contrast to previous perspectives of organizational functioning which focus on internal dominants, open system theory views environmental influences not as sources of error variance but as integrally related to the functioning of a social system. Therefore, one cannot understand the functioning of an organization without a constant study of the external forces that impinge upon it (Katz and Kahn, 1966). The systems approach overcomes many of the previous criticisms of models of organizations in disasters based on stable, formalized organizations with limited objectives (Dynes, 1969:151).

A major element in open system theory which makes this approach particularly useful in explaining the activities of organizations in disaster is its emphasis on adaptation. Although
adaptation conjures up ideas of purposeful or intelligent behavior on the part of organizations, nevertheless, these aspects exist and it is difficult to discuss organizational behavior "without taking into account what variously and rather loosely is called adaptiveness, purposiveness, goal-seeking and the like" (Bertalanffy, 1968:45). Authors have referred to this aspect of organizational functioning as coping with uncertainty (Thompson, 1967; Crozier, 1964), problem solving (Dynes, 1968), or adaptation (Lawrence and Lorsch, 1967).

Organizational Functioning

Consistent with the preceding organizational perspective and borrowing heavily from a perspective of organizational functioning proposed by Haas and Quarantelli (1968), the analytical framework used here states that to the extent that a system (or, in this case, an organization) persists there is a relative balance in its demand-capability ratio. That is to say that under normal circumstances it is assumed that the general capabilities of an organization and the general demands on the organization tend to be approximately in balance. Using an open system perspective it is clear that all organizations are subject to demands. These demands are a combination of the actual or perceived requests or commands for actions, services, or whatever the organization is providing. Organizations attempt to meet these demands with their capabilities. Capabilities consist of those resources (materials, funds, personnel, etc.) that could be used to meet those demands if the decision to mobilize them were made. The concept of capabilities actually encompasses "the organization," its structure, its norms, its resources, its general characteristics. If the demands and capabilities are in balance the organization persists.

The balance between organizational demands and organizational capabilities is not a static state. Rather it is a dynamic interaction between the organization and its environment resulting in changes of organizational characteristics (capabilities) in response to changes of environmental characteristics (demands). Recently, with the development and increased acceptance of open system theory, a number of case studies describing how organizations adapt to changing or hostile environments by means of goal adaptation, selection of membership and audience, and reinforcement of organizational structure have accumulated (for example see Clark, 1956, 1960; Gusfield, 1955; Messenger, 1955; Selznick, 1949; Sills, 1957; Zald, 1970; Corwin, 1972; Thompson and McEwan, 1958). Other studies (for example see Burns and Stalker, 1961; Chandler, 1962; Emery and Trist, 1965; Lawrence and Lorsch, 1967; and
Neghandi and Reiman, 1973) have further indicated that as the environment becomes more dynamic the organization must not only become more receptive to change, but also alter its internal structure and operations to maintain and/or establish a high survival potential. Adaptability exists, by definition, to the extent that a system can survive externally induced change in its transactional interdependencies in the long run (Terryberry, 1968: 612). Organizations conceived as problem solving systems are never in a state of perfect equilibrium or adjustment since organizations of various types are always plagued with problems which are due to internal characteristics as well as external characteristics. Organizational characteristics are, therefore, both part of, and a result of, the dynamic demand-capability balance. The consequence of the demand-capability balance and the associated organizational characteristics is actual or potential organizational functioning. This can be graphically depicted as follows:

![Figure 2. Direct Determinants of Organizational Functioning](image)

The question central to this research, however, is what can be explained or predicted regarding the level of organizational functioning when both demands and capabilities are changed by disaster impact. To address this question it is necessary to expand this framework to include a distinction between the pre-disaster time (T1) and the post-impact time period (T2). During the pre-disaster time period the demand-capability balance and the characteristics of the organization are seen as the result of the general historical context (T0) from which it evolved. The T1 demand-capability balance and organizational characteristics are also the result of other conditions active during the immediate time period. This can be graphically depicted as follows:
Figure 3. Determinants of $T_1$ Demand-Capability Balance and Organizational Characteristics

Focusing on changes through time it can be seen that the current demand-capability balance and organizational characteristics, which are the result of the historical context and immediate conditions, can become part of the context out of which a future demand-capability balance and organizational characteristics develop. By adding a new set of immediate conditions, the resulting $T_2$ demand-capability balance and organizational characteristics can be explained. The consequence of the demand-capability balance and organizational characteristics at $T_2$ is $T_2$ organizational functioning. This can be graphically depicted as follows:

Figure 4. General Determinants of $T_2$ Organizational Functioning

The final step in the development of an explanation of organizational functioning following disaster is to include the effect of disaster impact. Most importantly, a disaster presents a new set of post-disaster ($T_2$) conditions under which an organization must operate. For example, damage to transportation or communication facilities can often make normal tasks very difficult
to accomplish. Disaster conditions should not necessarily be conceived of as all negative. New resources (personnel, funds, materials, etc.) may be made available to organizations for their use and some of their previously established demands may be withdrawn. In addition, a disaster can also affect many of the established pre-disaster elements of the demand-capability balance, organizational characteristics, and/or the general context out of which the post-disaster, \( T_2 \) demand-capability balance develops. Organizational structures may be destroyed, organizational resources (personnel, funds, materials, etc.) may be affected, and demands may be changed. This alteration of the context and conditions has definite consequences for post-disaster organizational functioning.

To summarize, the proposed analytical framework or organizational functioning views organizations as attempting to meet demands made on the organization with the capabilities that can be mobilized to meet the demands. With organizational survival it is assumed that there is a degree of balance between organizational demands and organizational capabilities. This balance never reaches equilibrium because of periodic changes or situational conditions which affect the characteristics of organizational capabilities and/or organizational demands. Despite this dynamic character of the framework, it also proposes that the current demand-capability balance is not spontaneous and unique, but rather a continuous outgrowth of a context of organizational and environmental patterns and trends from previous time periods. To account for organizational functioning following disaster adjustments must be made for the impact of the disaster on the current conditions and its impact on some of the more established contextual elements. These changes affect both the post-disaster demand-capability balance and the organizational disaster response.

![Figure 5. The Analytical Framework](image-url)
Having discussed the overall analytical framework for the explanation and understanding of church disaster response, it is necessary to further discuss the major elements of the framework and show how they are consistent with established studies of organizational functioning. This section will begin with organizational demands and capabilities followed by discussions of the context, conditions, and disaster impact. Immediately following will be a discussion of the specific elements of the framework which, from their coverage in the literature, are expected to be associated with the response of religious organizations to disaster.

Demands

All open systems are subject to demands. These organizational demands are defined as "external requests or commands for action either received directly by any member of the organization or resulting from knowledge of demand relevant cues" (Haas and Drabek, 1973:24). Demands, therefore, include a combination of both actual and perceived requests or commands for actions, services, or whatever the organization is providing by both elements of the environment and elements of the organization itself.

A necessary condition for the stating or perception of demands which lead to organizational functioning to meet these demands is prior consensus regarding domain. The domain of an organization consists of the specific goals or objectives it wishes to pursue and the functions or tasks it undertakes in order to fulfill these objectives (Levine and White, 1961; Dynes, Quarantelli, and Kreps, 1972). Through specifying the range and types of activities and interaction which should be performed, an organization's domain serves to define its role or boundaries in relation to other systems by ordering its action in certain directions rather than in others (Thompson, 1967). Therefore, the domain of an organization serves to clarify its parameters or boundaries and organizational characteristics by providing normative ideas about what the group has the right and responsibility to do.

The establishment of domain is not an arbitrary, unilateral action, although it is necessary that the domain be seen as legitimate with regard to organizational goals. In addition, in order for a domain to be operational, the organization's claims to a domain must be recognized by those parts of the environment which are relevant, or potentially relevant, to goal setting and goal attainment (Dill, 1958). This task environment was found by Dill to include four major sectors: (1) customers of the output, (2) suppliers of the input, (3) competitors for both markets
and resources, and (4) regulatory groups. In order for demands to be met for any length of time it is necessary that they be supported from each of these perspectives.

The important aspect of this conception of organizational demands is that it fits well with the demand-capability framework. Just as the demand-capability balance is seen as developing out of an historical context and in response to immediate situational conditions, organizational demands can also be seen as the result of the context and conditions. Current organizational demands have been shown to be the result of previous domain agreements based on environmental and organizational characteristics and their shared understanding of what constitutes a legitimate demand. Current situational conditions can also work to alter this previously established domain consensus by affecting the environmental and organizational characteristics. Demands can then be expected to change in quality and/or quantity, but a significant degree of continuity in demands between time periods would be expected after having adjusted for changes in the current situational conditions.

Capabilities

Capabilities, the other major determinant of the demand-capability balance, are defined as "the entire range of possible actions that an organization could perform if appropriate decisions to do so were made" (Haas and Drabek, 1973:249). This understanding of capabilities includes not only the current organizational characteristics and resources that could be mobilized to meet the demands, but also other possible organizational design and action alternatives as well, given the individual components and other available resources. Using this conceptualization it is possible to develop a profile of capabilities for organizational functioning to different types of demands that do or could develop. Maniha and Perrow (1965) reinforce this understanding of organizational capabilities, stating that:

all organizations can be used for purposes that go beyond their normal goals. In the process of meeting their goals and surviving, they generate power which can be put to uses that are independent of the achievement of normal goals (Maniha and Perrow, 1965:166).

In this respect, organizational capabilities do not refer to some static functioning structure, but rather to a dynamic potential component capable of adapting to changing environmental demands.
Organizational capabilities may be more clearly understood when seen as the characteristics of the organization. This general characterization of the organization has been discussed as being composed of three dynamic elements: 1) the normative component, 2) the interpersonal component, and 3) the resource component (Haas and Drabek, 1973). The normative component is comprised of "the social norms that constitute the rules of organizational life" (Haas and Drabek, 1973:110). Thus, the normative component includes official and unofficial norms of what the group has the right and responsibility to do, positions, roles and system domains. These norms are constantly changing and may be developed within the organization, brought in from outside the organization, or promulgated by some outside source.

The second element, the interpersonal component, is composed of "sets of relatively stable person to person understandings and orientations which are independent of the positions they enact" (Haas and Drabek, 1973:114). Much of the early human relations research has shown interpersonal relations, in addition to more formal aspects, to be important for organization functioning.

The final explanatory element, the resource component, includes "physical resources currently being used or known to be available for use by organization personnel and ideas about the proper and improper usage of these resources" (Haas and Drabek, 1973:116). The resource component includes both internal resources—material resources, internal ecological setting, and relevant specialized or special characteristics of members—and external resources—established interorganizational relationships, available material resources, the external ecological setting and external human resources.

It should be easily recognized that these three components of organizational capabilities are often overlapping and interacting. For example, resources include not only the "raw material" but also the norms regarding how and when the resources should be used. These norms and resources can also originate from within or outside the organization. However, what Haas and Drabek suggest is that organizational capabilities are largely a function of the formal normative structure, the informal interpersonal relations, and the available resources.

For the purposes of this study it will be necessary to alter Haas and Drabek's conception of organizational capabilities. First of all, Haas and Drabek present their normative structure on a very abstract level, showing how the norms are clustered into roles, positions, and system domains. In this report it will be assumed that much organizational behavior is explained by norms, but the focus is on the concrete consequences of these
noms: the structure and functioning of the organization. References will be made to the fact that certain structures or activities do reflect certain norms, but the emphasis will be on the observable normative/structural characteristics of the organization rather than simply the normative structure.

The interpersonal structure, Haas and Drabek's second element, also cannot be included without change in the conceptual framework used for this study. Their interpersonal structure represents patterns of person to person interaction which must be studied using individuals as the unit of analysis. Since this study focuses more on the organization as the unit of analysis it is not appropriate to focus on person-to-person interactions. Rather the study will focus on aspects of member participation and interaction as a whole. While member participation and interaction are not the same as Haas and Drabek's interpersonal structure, they do provide a measure of the frequency of, and the potential for, member interaction.

The final component of organizational capabilities, the resource structure, can be adopted quite easily into the analytical framework proposed here. A reason for this is that Haas and Drabek's use of the resource structure is quite broad including all known physical resources and the norms regarding their usage. Because of the physical nature of resources the way an organization is structured would not be a resource, but a normative/structural component. Organizational resources would include funds, personnel, materials, information, buildings, etc. which are known to be available to meet organizational demands. As mentioned earlier, the distinction between internal and external resources is important to maintain since there are many resources outside the immediate control of the focal organization which can be made available to it if the decision to do so is made.

Having made minor changes in what constitutes the components of an organization's capabilities it is necessary to further expand the understanding of the demand-capability balance. Previously it was stated that under normal conditions the general capabilities of an organization and the general demands on the organization tend to be approximately in balance (Haas and Quarantelli, 1964:4). However, by considering the element of time it can be seen that the demand-capability balance is never in a perfect state of equilibrium or adjustment. The lack of equilibrium, however, does not mean that adaptation by organizations to changing demands is a purely random phenomenon. Rather, the demand-capability balance can be seen as being the result of the historical context out of which the current demand-capability balance has developed and new conditions which are currently affecting organizational functioning. An expanded discussion of each of the framework elements will follow.
Focusing first on the historical context, it is generally accepted that "both institutionalized and collective behavior are contained within and predicated upon social organization" (Weller and Quarantelli, 1973:675). For example, discussing formal organizations Blau and Scott state that "the prevailing cultural standards and the structure of social relations serve to organize human conduct in the collectivity" (Blau and Scott, 1962:4-5). Blumer (1946) and Quarantelli (1970) both refer to the context as a major determinant of social movements and collective behavior. "Social organization not only 'contains' social action, it also provides a foundation of social norms and relationships upon which action is built" (Weller and Quarantelli, 1973:675).

Social structure and culture are not the only elements of the context which determine the current demand-capability balance and current organizational functioning. "The best predictor of future behavior is knowledge of past behavior" (Haas and Quarantelli, 1964:8). To the extent that this is a valid principle, variation in current organizational performance should also be predictable, at least in part, by looking at the demand-capability balance during preceding time periods. It should be obvious from the previous discussion that this historical context consists of both endogenous and exogenous elements of organizational capabilities and organizational demands. Also included are patterned periodic changes in the demand-capability balance. This principle has found empirical support in explaining adoption of innovations and the rate of adoption of innovations (Aiken and Hage, 1970), the prediction of the structure of an organization from the context in which it functions (Pugh, Hickson, Hinings, and Turner, 1969), and the understanding of organizational functioning under stress following disasters (Quarantelli, 1966; Adams, 1969; Forrest, 1972; Dynes, Quarantelli, and Kreps, 1972). The context, including both the broad social organizational framework within which an organization functions and its own specific characteristics during previous time periods, is an important element in determining the current demand-capability balance and organizational functioning.

The current demand-capability balance is also a result of the immediate conditions operative in the setting involved. These contemporary conditions, which can be endogenous or exogenous to the organization being studied, affect any or all of the elements of the ongoing demand-capability balance. The range of this class of current and unpredictable conditions which might affect organizational functioning is quite broad. However, in the context of
this research the range of conditions will be narrowed by focusing on the impact of disaster. In reality, both the organization and the environment are constantly being affected by a wide variety of current conditions most of which are of less significance than the impact of a disaster.

**Disaster Impact and Organizational Functioning**

Utilizing the preceding framework and assuming a relative balance of organizational demands and capabilities, the major difference between pre-impact ($T_1$) organizational functioning and post-disaster impact ($T_2$) organizational functioning is the effect the disaster conditions have on the demand-capability balance. For these purposes a disaster is defined as:

an event, concentrated in time and space, in which a society, or a relatively self-sufficient subdivision of a society, undergoes severe danger and incurs such losses to its members and physical appurtenances that the social structure is disrupted and the fulfillment of all or some of the essential functions of the society is prevented (Fritz, 1961:655).

In general, when disaster strikes a community one of the major consequences is the creation of realistic tasks for the community organizations to solve. The demands on certain organizations increase suddenly and dramatically, sometimes to a point of overload. In addition, the demands frequently involve new tasks and unfamiliar activities requiring the establishment of a new organizational set and domain consensus, while certain aspects of the pre-disaster functioning become less important. At the same time, it is not unusual for the capabilities of organizations to decline sharply since members may be killed or injured and material resources may be destroyed. "Disasters render ineffective customary behavior patterns, often nullify previous efforts, and block or drastically change the course of events" (Moore, 1956:733). As a result, organizations can be expected to undergo rapid and sometimes radical modifications as their structures adapt to the stressful situations.

Consistent with the demand-capability balance framework, organizations typically attempt to adapt to the new conditions by either making an attempt to control the demands or to increase the capabilities of the organization to meet the increased demands. Dynes (1968:59) indicates that in order to reduce demands 1) new demands are rejected as not in the purview of the organization's responsibility, 2) rationing of the services of an
organization may be instituted, and/or 3) regular demands of the organization can be eliminated and new demands accepted in their place. The major adaptive technique to increase organizational capabilities is through the acquisition of new resources.

In a community, the impact of disaster conditions on the demand-capability balance and organizational functioning is made apparent by the sequential involvement of different types of organizations associated with increasing scope of the disaster event. Dynes (1974) states that the first organizations involved in any community disaster are established organizations with regular disaster structure and tasks. Later, when it is made apparent that the demands are not being met, expanding organizations with latent disaster resources become involved, although their mobilization is slower and usually more difficult than for established organizations. Extending organizations are the next type of organization to become involved. They generally become involved somewhat later than the two previous types of organizations since community expectations of their involvement are less institutionalized. Because of the variety in levels of community orientation or possession of emergency related resources, the involvement of these organizations tends to be delayed until a community assessment indicates ways in which these organizations can be of specific assistance. The final type of organization to become involved, emerging organizations, tends to be associated with the development of new, unanticipated tasks which are not being handled by any of the other types of organizations. Although not conclusive, this partial explanation of organizational adaptation to disaster conditions points out the community-wide relationship between changes in the demand-capability balance and organizational functioning following disaster.

Other significant studies in the disaster literature also closely parallels this general formulation of organizational functioning. Dynes (1974), for example, views the major determinants of organized behavior in disasters as an organization's pre-disaster orientation to the community and/or possession of emergency resources. Very little linkage is needed to show the similarity between an organization's community orientation and the conceptualization of externally or internally imposed demands. Equally true is the similarity between possession of emergency resources and organizational capabilities.

The assumption of the relative level of continuity between organization functioning at $T_1$ and $T_2$ is also supported in the disaster literature (Adams, 1969; Dynes, 1974; Dynes, Quarantelli, and Kreps, 1972; Forrest, 1972; and Quarantelli, 1966), although it should also be recognized that a great deal of significant behavior can be observed in the emergency period which has little connection with pre-disaster patterns, making the prediction of disaster activities using this assumption more difficult.
Having developed and discussed a general explanatory framework of organizational functioning, and after having shown some consistency between the framework and the findings of studies of organizational functioning in disaster, the remainder of this chapter will specifically apply the framework to the problem of explaining the disaster activities of religious organizations. Since it is assumed that the pre-disaster demand-capability balance is the major contextual element out of which post-impact functioning will develop, those elements of the pre-disaster demand-capability balance which are expected to be associated with the disaster functioning of religious organizations will be discussed. Since it is also assumed that the disaster conditions can affect the pre-disaster demand-capability balance, adjustments for the effect of disaster conditions on both demands and capabilities will also be discussed.

One final point of clarification must be made before turning to the specific application of the framework to the response of religious organizations to disaster. For some purposes it appears conceptually clear to speak of a local church congregation as a unique and independent organizational system. Each congregation has its own members, clergy, resources, and organizational structure, all of which can affect church activities. However, many of the characteristics of the local congregation are derived from the larger judicatory structure to which it belongs. With varying amounts of flexibility church denominations set up belief, authority, organization, and resource structures which can affect the activities and structures of the local congregation. For example, all United Methodist churches tend to have the same theological beliefs, congregational autonomy, decision-making structure, and the same denominational resources potentially available to each congregation for disaster activities. The analysis of the disaster response of religious organizations will utilize characteristics derived from both the local and the larger denominational level since both types of characteristics are elements of the local congregation. Denominational characteristics are simply determined by the congregation's membership in the larger denominational organization and are shared with other congregations of the same denomination.

**Disaster Response Defined**

Having developed the conceptual framework and having derived the specific factors expected to be associated with a disaster response, the final task is to develop an understanding of what a "disaster response" really is. When focusing on the disaster response of religious organizations it is important to maintain a
distinction along two dimensions. The first is a time dimension distinguishing between those emergency activities performed during the week following the disaster and activities performed after the first week. During the first week activities are organized to meet the immediate emergency needs of the community such as shelter, food, clothing, money, volunteer labor, work space, worship, and counseling. After the week following the disaster begins a period of long-term recovery involving less immediate but more substantial activities. In addition to a continuation of some of the emergency activities, long-term recovery activities include providing furniture and household items, providing loans, locating housing and employment, coordinating outside work groups, providing facilities for day care, youth, and elderly activities, and working with special projects and organizations organized to facilitate disaster recovery.

The second dimension of church disaster response is whether the church disaster activities are directed toward congregation members only or toward members of the community in general. As illustrated by the findings of the Wilkes Barre church study, some church disaster activities are made available to congregation members only while others are made available to any "deserving" people in the community. Occasionally, it was found, all disaster response activities of certain churches are either limited to members of the congregation or are made available to people outside the congregation. Based on the demand-capability framework, increasing the domain of the church to include non-members significantly increases the demands for church disaster activities. Churches are expected to develop a larger disaster response to meet the increased demands. Actually providing disaster aid to non-members also serves as an increased drain on existing church resources. Because of the impact that increased demands have on the demand-capability balance it is necessary to distinguish between an activity that a church provides for its members only and an activity that is open to anyone in the community. Based on this distinction, churches that open their disaster response activities are characterized as being more highly involved in their activity than churches that limit their activities to congregation members only.

**Determinants of Church Response to Disaster**

The locating of specific characteristics of religious organizations associated with disaster response represents an extensive review of the sociological literature. Because of the expected high level of consistency between pre-disaster and post-disaster functioning it was possible to review the organizational
literature, the voluntary association literature, the helping behavior literature, and the religion literature to find those characteristics that previous research has shown to be associated with organizational functioning similar to the activities of churches following disaster. The disaster literature was also reviewed to provide those characteristics of organizations that disaster researchers have found to be associated with organizational response to disaster. During this process, three systematic reviews of much of the disaster literature were found: Barton, 1969; Dynes, 1974; and Mileti, Drabek, and Haas, 1975. Although these sources are referenced often throughout this dissertation they were especially helpful in providing leads to relevant disaster studies. The following section will present the results of this review. Church characteristics expected to be associated with disaster response activities will be organized using the demand-capability framework.

Pre-Disaster Capabilities

Following the adaptation of Haas and Drabek's conceptualization, the capabilities of religious organizations are divided into the three components: 1) the normative/structural characteristics, 2) the member participation and interaction component, and 3) the resource component. It is recognized that, while there may be a conceptual distinction here, in reality there is a great deal of interaction and overlap between these three components. As a result, the classification of particular elements into the three categories may appear, at times, arbitrary.

Normative/Structural Characteristics

As stated earlier, the normative/structural component is comprised of the social norms that constitute the rules of organizational life including official norms of what the group has the right and responsibility to do, positions, roles, system domains, and the concrete structural consequences of these norms. The normative component of religious organizations can be further subdivided into characteristics of the church as a result of its denomination, membership, general church characteristics, and characteristics of the ministerial role.
Denominational Characteristics

Focusing on denominational characteristics, one important characteristic of local churches is church polity or "the administration and government of the church, including the relation between individuals and groups within a denomination" (Harrison, 1959:4). According to Moberg (1964) there are three pure types of church polity: episcopal, congregational, and presbyterian. In the episcopal form authority flows from the highest offices down to the members, so the clergy are freed from dependence upon local congregations. Congregational bodies have the opposite flow of authority in which local autonomy is emphasized and democratic organization theoretically gives all members the right to propose church action. Presbyterian polity falls between these two, with authority flowing out from the middle level of elders and presbyters to both the lower level of the local church and the higher level of the denomination.

Regarding the association between church polity and church functioning, Wood (1970), in a study of authority and civil rights policy in churches, found that religious leaders who had formal authority insulating them from member pressure were more successful in supporting controversial civil rights policies. Although there are differences between disaster situations and controversial civil rights policies, it is expected that pastors with the clearest authority over congregational resources and decision-making procedures will be most successful in setting up a congregational response to the needs of disaster victims.

Considering the authority relationship between the denomination and the congregation, episcopal polity structures provide for both centralized decision-making structures and centralized control of a large amount of denominational resources. While decisions regarding these resources are not made at the congregational level, a centralized denominational decision-making structure would be more likely to be able to make decisions necessary to provide the local congregations with denominational support. Therefore, it would also be expected that the greater the centralized or hierarchical control at the denominational level, the more likely a disaster response by the congregation using denominational resources will develop.

A second variable somewhat associated with church polity is complexity. At the congregational end of the polity spectrum it is typical to find the whole congregation as the sole decision-making body. Within the denominational organization there is again little emphasis on the development of specialized, complex support structures. Moving toward the episcopal end of the continuum, as direct decision-making authority is removed from the whole
congregation there develop increasingly complex governing and specialized support bodies at both the congregational and denominational level. It is difficult to say whether complexity at the denominational level is in any way associated with a more efficient response. However, complexity has been shown to be positively associated with organizational change (Aiken and Hage, 1970). Complexity, to the extent that it indicates involvement in a number of different functions, is expected to be associated with the development of recovery efforts. Complex denominations are more likely to have structures for recovery activities already set up and would be more adaptable than those with less complex structures.

Two other factors related to denominational structure are too broad indicators of denominational integration: the frequency of denominational meetings and the number of denominational periodicals. While there is no one-to-one relationship with church polity, it may be that the denomination that has frequent meetings of all its local churches and has frequent communication with them through denominational periodicals will be more likely to supply its local churches with denominational aid and increase the likelihood of disaster response by local churches.

Theological position is another denominational characteristic of churches which may be associated with strength of disaster response. Moberg (1970), for example, classified theological positions on a continuum from liberal to conservative. He concluded that:

Since the conservative sect-type repudiates compromises, stresses literal obedience to its scriptures, and emphasizes beliefs and rituals designed to satisfy individual rather than social needs, one would expect its exemplars to be aloof from cooperative relationships with councils of churches and insistent upon individualistic and conversionist approaches to the resolution of social problems, in contrast to more liberal groups, which one would expect to be more cooperative with others and more inclined toward direct involvement in political community affairs (Moberg, 1970:55).

Moberg found no difference in the participation in community affairs between liberal and conservative groups. However, other authors (see Glock and Stark, 1963 and Marx, 1967) have found associations between church theology and participation in movements for secular change. Fundamentalist theologies here are interpreted as alternatives for secular involvement although Moberg admits that religion has occasionally played a strong
positive role in movements for radical social change. Realizing the ambiguities of the research up to this time, it is expected that churches with liberal theologies will be more likely to be more involved in recovery activities and will also be more likely to offer aid to individuals outside their own church.

Two final indicators of denominational normative/structural characteristics are membership in the National Council of Churches in Christ and the denomination's level of benevolence giving. Looking first at the list of denominations belonging to the National Council of Churches in Table 1 it can be seen that there is wide diversity in the characteristics of member churches. However, one shared characteristic of these churches is their willingness to participate in a national ecumenical organization, which is a behavioral characteristic of Moberg's liberal theology. A denomination's level of benevolence giving is also a behavioral measure of a liberal theology, indicating a denomination's willingness to participate in more "outer-directed" programs. A trend of increasing levels of benevolence giving also indicates a change in the denomination toward increasing participation in activities outside the sphere of everyday denominational activities. It is expected that churches whose denominations belong to the National Council of Churches and/or which have higher or increasing levels of benevolence giving will be more involved in community disaster response.

**Church Characteristics**

Turning now to normative/structural characteristics of the individual church congregations within a denominational framework the first variable to be considered is church age. Conflicting evidence exists regarding the association between the age of a church as a congregation and member participation. Moberg (1962) presents a model of the life cycle of congregations. Accompanying the development of the congregation in his model, Moberg predicts a decrease in member vitality. Members of older congregations also showed less support for congregational goals. Wilken (1971), in contrast, found evidence for a positive association between congregation age and member participation, which he interprets as perhaps signifying the importance of tradition of participation in older congregations. Although its association with participation in disaster recovery activities is not easily predictable from the current literature, the age of the congregation may be useful in this study.
Table 1. Members of the National Council of Churches in Christ

<table>
<thead>
<tr>
<th>African Methodist Episcopal Church</th>
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<tbody>
<tr>
<td>African Methodist Episcopal Zion Church</td>
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<tr>
<td>American Baptist Churches in the USA</td>
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<tr>
<td>The Antiochian Orthodox Archdiocese of Toledo, Ohio and Dependencies in North America</td>
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<tr>
<td>The Antiochian Orthodox Christian Archdiocese of New York and All North America</td>
</tr>
<tr>
<td>Armenian Church of America</td>
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<tr>
<td>Christian Church (Disciples of Christ)</td>
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<tr>
<td>Christian Methodist Episcopal Church</td>
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<tr>
<td>Church of the Brethren</td>
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<tr>
<td>The Episcopalian Church</td>
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<tr>
<td>Friends United Meeting</td>
</tr>
<tr>
<td>General Convention, the Swedenborgian Church</td>
</tr>
<tr>
<td>Greek Orthodox Archdiocese of North and South America</td>
</tr>
<tr>
<td>Hungarian Reformed Church in America</td>
</tr>
<tr>
<td>Lutheran Church in America</td>
</tr>
<tr>
<td>Moravian Church in America</td>
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<tr>
<td>National Baptist Convention of America</td>
</tr>
<tr>
<td>National Baptist Convention, USA, Inc.</td>
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<tr>
<td>Orthodox Church in America</td>
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<tr>
<td>Philadelphia Yearly Meeting of the Religious Society of Friends</td>
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<tr>
<td>Polish National Catholic Church of America</td>
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<tr>
<td>The Presbyterian Church in the United States</td>
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<tr>
<td>Progressive National Baptist Convention, Inc.</td>
</tr>
<tr>
<td>Reformed Church in America</td>
</tr>
<tr>
<td>Russian Orthodox Church in the USA</td>
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<tr>
<td>Servian Eastern Orthodox Church for the USA and Canada</td>
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<tr>
<td>Syrian Orthodox Church of Antioch</td>
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<tr>
<td>Ukranian Orthodox Church in America</td>
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<td>United Church of Christ</td>
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<tr>
<td>The United Methodist Church</td>
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<tr>
<td>The United Presbyterian Church in the United States of America</td>
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</table>

(Source Jacquet, Constant H., Jr., Yearbook of American and Canadian Churches, New York: Abindon, 1975, pg. 7)
Community orientation of an organization has been associated with organizational disaster response (Dynes, 1974). As with the discussion of denominational theology, churches may vary with regard to their orientation toward inner-directed activities or other-directed activities. This variation in community orientation may occur within denominations as well as between denominational units. Community orientation is best measured by pre-disaster levels of community activities. Contrasted with theology which involves norms and values relating to such things as community action, community orientation involves the actual implementation of congregational values in community activities. This can be on an individual congregation level, such as direct efforts to serve needy individuals or groups in the community, levels of benevolence giving, or at a more cooperative level, involving the participation in councils of churches, community committees, or other joint activities. Focusing more specifically on disaster response, community orientation norms may also include seeing the church as having a social as well as a spiritual role and accepting an active disaster role rather than expecting to be only a facilitating agent. The expectation is that churches which exhibit a high degree of community orientation through their involvement in pre-disaster community activities would be more likely to continue that orientation with a greater disaster recovery effort.

Particularism is another variable associated with the denominational belief system, but interpreted by each individual congregation and pastor. Most simply put, "religious particularism is the belief that only one's own religion is legitimate" (Glock and Stark, 1965:20). Whether broad or narrow, a particularistic outlook discredits all persons whose religious status lies beyond the boundaries of what is seen as the "true" faith. Although Glock and Stark claim that particularism is distinct from hostility, it would be expected that particularistic churches would be less likely to engage in disaster recovery activities for others outside their own denomination.

Authority structure is another characteristic of local congregational units which is largely determined by the denomination, but which shows significant variation within denominations depending on individual congregation needs. Authority differences between congregations are best seen in terms of the predominance of major policy, programming, finance, or property decisions being made by laity or clergy, the number of major decision-making bodies, and the number of individuals who are members of these formal decision-making bodies. In general, high centralization of authority tends to facilitate rapid decision-making more than does authority which is located at various levels within a particular organization. Since crisis situations almost invariably require
that decision-making processes be hastened (Dynes, 1970:167) it is expected that congregations with centralized authority will be more likely to organize a disaster response than those with more dispersed authority structures.

The final structural characteristic of the church congregation is its membership in an ecumenical disaster relief organization, such as were found to exist in both Xenia and Wilkes Barre. The importance of including this characteristic as part of the normative/structural component is that membership in an ecumenical disaster relief organization is a structural change that could have significant consequences of limiting church disaster response. Conversely, it could become a facilitating agent providing a better distribution of resources, information, personnel, etc. resulting in even further involvement by individual churches. Although at this time it is difficult to make a prediction regarding the direction of the association, it is expected that joining an ecumenical disaster relief organization will be associated with the development of a church disaster response.

Characteristics of Pastor's Role

The final element of the normative/structural component to be considered here is the role of the pastor. Since there is no information specifically related to the association between characteristics of the pastoral role and disaster response an attempt is made to link certain pre-disaster characteristics which appear as though they should be linked to church participation in disaster response activities. These three aspects of pastoral role are the characteristics of pre-disaster (T₁) pastoral role performance, the more general perception of a spiritual vs. secular role by the pastor, and the pastor's previous level of community involvement. The most extensive study of the pastoral role has been conducted by Blizzard (1955). From his analysis of pastoral roles Blizzard has come up with nine role activities which have been shown to be analytically distinct. The list includes administrative, organizational, pastoral, preaching, priestly, teaching, scholarly, evangelism, and community tasks. Because of the continuity of T₁ and T₂ activities and the relative importance of pastoral and organizational roles in disaster situations, it is expected that pastors who specialize in specific aspects of their pastoral role which are most pertinent to a disaster role will also be most likely to perform the expanded pastoral and administrative tasks necessary to meet the needs of the community following a disaster.
Related to Blizzard's study of the pastoral role is Johnston's (1969) separation of a pastor's view of ministry into a role as spiritual leader and a role as advocate for their people in the social, political, and economic realms. Although there is undoubtedly much blurring of the roles in actual circumstances it is hypothesized that pastors that view their ministry as including more than solely a spiritual role will more likely be associated with congregational and personal disaster responses.

As with previous congregational involvement, it is also expected that the pastor's pre-disaster involvement in community activities will be associated with his/her level of disaster activities. Assuming that the pastor's activities both reflect and influence the congregation's activities, it is expected that congregations with pastors who were involved in community activities prior to the disaster will organize disaster responses.

Member Participation and Interaction

The second element of organizational capabilities is member participation and interaction. Although not synonymous with Haas and Drabek's interpersonal component, measures of member participation and interaction do provide a holistic understanding of the potential for, and some actual occurrences of, member functioning to accomplish congregational goals. Although churches, especially local church units, have been found to show high levels of social and ethnic homogeneity (Williams, 1970), some researchers have focused on differences in the internal make-up of church congregations. The earliest attempt at developing an understanding of the interpersonal make-up of churches focused on the areas from which churches attracted their membership. Sanderson (1932) distinguished between city wide and neighborhood churches in terms of the distance members resided from the church. Later both Shippey (1960) and Nelson (1971) made similar dichotomizations of church types. Their first type, the communal church, "recruits its members from a given and clearly defined territorial area, exercises a monopoly of religious provision within the community, is viewed by the members of the community as providing the center of the symbolic and social as well as the religious life of the community" (Nelson, 1971:103). The second type, the associational church, is characterized in the opposite fashion, serving a widely dispersed parish which selects a particular church on the basis of some pragmatic criteria with members becoming almost clientele of the parish leaders.

Regarding the development of disaster recovery activities, both spatial and social homogeneity increase the potential for a
solidaristic interpersonal make-up immediately preceding disaster impact. This internal solidarity should provide a strong basis for change and adaptation needed to meet disaster demands. Form and Nosow (1958:226), for example, found organizations that were most effective during disasters exhibited high levels of pre-disaster organizational cohesion. Therefore, it is expected that organizations with a high level of spatial and/or social homogeneity will be more likely to develop a disaster response.

When addressing the question of the interpersonal characteristics of churches it is also possible to study some more concrete aspects than the potential strength resulting from spatial and social homogeneity. Actual measures of pre-disaster participation and communication within the church provide information regarding the actual ongoing occurrence of interpersonal contact. Churches have a wide variety of types of interpersonal contact about which there are formal records kept. The most common types of church participation and communication are Sunday worship attendance, Sunday School attendance, membership in men's, women's, and youth organizations, social occasions, weekly worship services, and congregational newsletters. It should be understood that these measures of participation and communication may be the result of numerous unspecified conditions. However, it should be recognized that they also reflect or encourage high levels of interpersonal relations within the congregation. Therefore, it is expected that those congregations with the highest pre-disaster rates of actual interpersonal contact and communication will be more likely to develop a disaster response.

Resources

Organizational resources are the third and final component of organizational capabilities, although in a broad sense both the normative/structural and member participation and interaction can be viewed as resources in determining organizational action. The resource component, as it is used here, refers specifically to "physical resources currently being used or known to be available for use by organizational personnel and ideas about the proper usage of these resources" (Haas and Drabek, 1973:116). The resource component is further divided into internal church resources—including church congregational resources, the pastor, and congregation members—and external resources—resources controlled by the denominational organization and the surrounding community. In all cases what is important is the relevance of the specific resource for the development of disaster recovery efforts.
Possession of emergency resources has already been shown to be of major importance in the involvement of community organizations in disaster response (Dynes, 1974:16). To determine what resources are expected to be associated with church disaster activities all one has to do is to look back at the discussion of the "typical" disaster role of religious organizations and determine what resources are necessary to carry on those activities. The possession of such resources is necessary and indicates the potential for organizing disaster activities.

Congregational Resources

The first type of resources considered is resources held by the congregation as an organization. These include the size and growth of the annual congregation budget, congregation size and growth, number of paid ministerial staff, and the possession of facilities usable for emergency purposes. The ability of a congregation to provide money and other physical resources is closely related to congregational budget and membership size. Congregation size is also a major determinant for the availability of volunteer labor. Possession of certain facilities, such as a sanctuary, kitchen, and large or small meeting rooms are also prerequisites to the provision of shelter and feeding of displaced individuals and the provision of feeding or office facilities for emergency organizations. Finally, the number of ministerial staff is closely related to their ability to meet normal congregational demands and the additional pastoral and counseling demands placed on them by the disaster. The more of these resources possessed by a church congregation the more likely it will be involved in disaster recovery activities.

One contradictory element of the above explanation is the role of church size in determining organizational participation. Size has been widely studied as an important determinant of the structure of formal organizations. Similar studies of the effect of size on voluntary organization activities have also been conducted which find a negative effect of size on member participation. Many of these interpretations of the effect of size on member participation have closely paralleled those of more complex organizations attributing specialization, formalization of internal structures, formalization of mechanisms of control, and changes in the authority relations to increasing size (Noberg, 1964; Faunce, 1962). At least one study (Warner and Highlander, 1964) has challenged this interpretation by showing that the negative association between size and participation in voluntary organizations remains even after controlling for structural intervening variables.
The current trend of interpretation of the negative effect of size on participation in voluntary organizations focuses on the effect size has on interpersonal interaction within the organization. Indik (1965), for example, suggests that increased size leads to more potential and necessary communication, less adequate communication, and reduction in the interpersonal attraction between members. Wilken (1971), in a similar study of member participation in churches, presents the interpretation that size makes communication difficult, leads to predominance of secondary relationships, reduces the demands made on individual members, increases the span of control, decreases the number of specialized roles relative to the size, excludes members from professional roles, formalizes communication, and reduces pastoral contact. Therefore, regardless of the lack of clarity in the interpretation of the effect of size on member participation during normal conditions, it may be that there is some type of interaction between the negative effect of large size on participation and the positive effect of size on the availability of resources. While larger churches may have a smaller percentage of members participating in disaster relief efforts they will be more likely to have the resources necessary for a viable disaster relief program.

The Pastor as a Resource

Characteristics of the individual who is pastor are also conceptualized as resources which may be related to church disaster response. Pastor's age, for example, has been shown to have consequences for minister-parishioner relations. In a study by Mitchell (1967) parishioners were less likely to request counseling assistance from youngest and oldest ministers and younger ministers are more likely than older to become frequently involved in church administrative activities. In another study, Wilken (1971) found the pastor's age positively associated with member participation. Although the relationship is not clearly supported, it should be expected that younger ministers will be more administratively active in disaster relief activities primarily associated with the provision of physical necessities. In contrast, it is expected the "middle-aged" pastors will be more involved in the pastoral and counseling aspects of disaster relief.

The educational level of the pastor is generally accepted as an indicator of a wide variety of disaster relevant skills such as administrative and counseling training. It will be expected to be positively associated with the development of disaster activities by the pastor's congregation.
The final pastoral characteristic is length of tenure or the number of years he/she has served this particular congregation. Although a number of articles in the organizational literature have focused on the factors of managerial change and longevity (see Grusky, 1963, 1964; Gamson and Scotch, 1964; Eitsen and Yetman, 1972), these studies have generally focused on the disruptive effects of changes in leadership. In contrast, Wilken (1971) found that the length of pastor's tenure was negatively associated with membership participation, indicating that in addition to the disruptive effects of frequent changes, "overstaying one's welcome" also leads to some organizational disruption. It is expected, therefore, that disaster responses will be organized by pastors of moderate lengths of tenure who have neither just arrived nor are "overstaying their welcome."

The Membership as a Resource

The third type of internal resource considered is the social characteristics of congregation members. In the past, studies of voluntary organizations have paid great attention to the composition of the membership, perhaps because the survival of voluntary organizations rests on the individualistic motivations of their members (Barton, 1969:6 and Nelson, 1971).

Social characteristics involve important individual social positions, roles, relationships and experiences. They provide the dynamic interface between the individual and larger contextual factors. Background characteristics give important considerations of who the person is in a social sense and what kinds of formative, socialization, experiences he is likely to have been exposed to (e.g., age, sex, race, status, life cycle stage, interpersonal role characteristics, etc.), as well as what he does (occupation, personal health and physical abilities, formal organizational affiliations, etc.) (Reddy and Smith, 1970:327).

Since congregation members are the major resource in carrying out church disaster recovery activities, it is necessary to include them in this discussion.

During normal circumstances there is much evidence that indicates that membership and participation in voluntary associations is related to most demographic variables, although there is some indication that church attendance is a much more complex variable showing much less association with demographic
variables (Lazerwitz, 1962). There is also substantial evidence that factors associated with the life cycle (age primarily) are related to participation in organized voluntary action. Reddy and Smith (1970) attribute this to the fact that life cycle factors play a major role in the development of significant other influences and in the amount and use of leisure time. Specifically looking at church participation, the association has been found to be positive. However, the distribution is bimodal. High participation occurs among younger age groups with a decrease among middle age groups followed by a strong increase among older age groups (Bell, 1971). Wilken controlled for the effect of sex and found a positive association between age and participation for men (younger men are more preoccupied with work) and a negative association for women (older women are more likely to be widowed and restricted). Marital status has also been shown to have an interactive effect with age on participation. Main (1967), for example, found single members more active in the 15-29 age group and married members more active in the 45 or more years age group. It should be obvious that the association between age and participation under normal circumstances is not clear. However, to the extent that disaster activities emphasize youth and activity among members that are likely to be relieved from normal job responsibilities, it is expected that congregations with more young, single members will be more likely to be involved in disaster recovery.

The number of congregation members who have been members for ten or more years, as with pastor's tenure, is an indicator of the potential for establishing close interpersonal ties with other members of the congregation and members of the community. Larger numbers of church members of ten or more years should serve as a resource in the development of a church disaster response. Therefore, it is expected that churches with larger numbers of members for ten or more years will be more likely to be involved in disaster activities.

There is also much evidence that socioeconomic status and educational level have a positive influence on the number of memberships an individual has in voluntary organizations, the amount the individual participates in an organization, the likelihood of the individual taking leadership roles, etc. (Smith and Reddy, 1973; Main, 1967). The types of activities in which congregation members are likely to be involved following disasters typically should not demand specialized educational and occupational skills. However, simply the greater likelihood of participation by higher social and educational levels should make congregations with greater numbers of these types of members more likely to participate in disaster activities.
Denominational Resources

Although churches are potentially the recipients of disaster resources from a wide variety of outside individuals and organizations the most commonly shared source of external resources is the larger denominational organization. There is no common pattern in the structure of denominations. Some denominations have as many as two or three different regional levels culminating with a national or international level organization. Despite this variety it is possible to focus on the denomination, nationally, as a whole to determine what resources are potentially available for distribution to individual congregations. Most generally, it is expected that denominations with larger numbers of churches, total numbers of members, total numbers of clergy, and greater denominational budgets have the greatest potential for supporting congregations in their disaster response.

Finally, several denominations, especially the Seventh Day Adventists and the Mennonites, have disaster relief units already established to facilitate the denominational response to disaster. Those churches belonging to denominations with some type of national disaster unit will also be more likely to be involved in disaster relief.

Demands

In a very basic sense, the role of most churches is to meet the needs of its members. Without its members the church would cease to function. The impact of disaster and the resulting demands on religious organizations are, to some degree, quite easily understood. Internally these demands are a function of such factors as damage to church facilities, damage to pastor's home, the number of member family homes damaged, damage to members' business property, and the stoppage of work. Since churches are inevitably linked to damage to church property, pastor's needs, and members' needs, these problems will be the most immediate determinants of church response to disaster. Evaluation of these needs is relatively simple, although some churches report long delays in simply contacting many of their members. There is also the normative linking of the demands with the appropriateness of congregational action, but since these internal needs are of the highest priority the linkage appears not to be problematical. It is expected that those churches with the highest levels of internal demands will be most likely to mobilize to meet these demands.
A discussion of demands more external to the congregation is more problematical. Churches are initially involved in meeting the needs of the congregation and vary both within and between denominational groupings with regard to their orientation to the larger community. In this instance a positive community orientation and an increased likelihood that the needs of the general community will be seen as legitimate demands for the congregation will be evidenced by membership in ecumenical organizations and participation in pre-disaster community programs. The distance from the church to areas directly affected by the disaster also indicates the likelihood that the damaged area falls within the congregation's "domain." Regarding both spatial and social distance, those congregations more closely linked with the stricken community will be expected to organize to meet the needs of the community in general following a disaster.

Post-Disaster Conditions

It would be naive to expect the pre-disaster \( T_1 \) demand-capability balance to be carried over into the post-disaster \( T_2 \) time period unaltered. It has already been shown that there develops a vast array of needs by much of the community which frequently overburdens even the best prepared disaster agencies. Organizational capabilities are also affected by the disaster impact making it impossible for the organization to utilize many of its pre-disaster capabilities. Damage to church facilities affects the ability of churches to provide shelter, food, space for emergency offices, and worship services. Damaged clergy living quarters and office space require time to be repaired thereby drawing the clergy away from some more "pastoral" activities. Injury, death, or damage to members' homes and businesses all put a drain on the congregational capabilities. In fact, any damage or disruption experienced by the congregation will limit the disaster response that it is able to develop. Disaster impact is an intervening condition between \( T_1 \) and \( T_2 \) organizational capabilities affecting the amount and condition of the pre-disaster capabilities which may be used for the post-disaster response. While disaster impact is developed here as a disruption for organizing church disaster response, it should be remembered that in the preceding section disaster impact and damage were seen as sources of demands which led to the development of church disaster response. These two expectations should not be seen as contradictory. Damage to church and member facilities is expected to result in demands for local churches. However, it is also expected that very severe levels of damage to either the church of a large number of congregation members would result in an inability for the church to organize a disaster response. Therefore, the
association between damage and church response is expected to be curvilinear: moderate levels of damage to the church or to its members are likely to result in church disaster response; severe levels of damage are likely to result in a reduction in church disaster response.

Summary

To summarize, systematic research of the disaster activities of religious organizations is just beginning. In order to explain the response of religious organizations an analytical framework based on the demand-capability balance is utilized. This framework views an organization as meeting its demands with its capabilities. Demands, in this instance, are external or self-imposed requests for physical or spiritual help following a disaster. The capabilities are those normative/structural characteristics, member participation and interaction characteristics, and resources which are available to churches and which make their recovery activities possible. The emphasis of this analytical framework is on the continuity between the context of the pre-disaster demands-capabilities balance and the post-disaster balance and the resulting organizational functioning. However, it is also recognized that disaster conditions have a major impact on this balance and organizational functioning through the effects on both the internal and external demands it places on particular religious organizations and the capabilities and resources which are left available to meet these demands. The proposed relationships are summarized in the following list.

Review of Hypotheses Regarding Church Disaster Response

Organizational Capabilities

Normative/Structural Characteristics

Denominational Characteristics
  Polity: Churches with a more episcopal denominational authority structure are more likely to be involved in church disaster response.
  Complexity: Churches with more complex denominational structures are more likely to be involved in church disaster response.
  Frequency of denominational meetings: Churches whose denominations have more frequent meetings are more likely to be involved in church disaster response.
Number of denominational periodicals: Churches whose denominations have more denominational periodicals are more likely to be involved in church disaster response.

Theology: Churches having liberal, rather than conservative theologies are more likely to be involved in church disaster response, particularly responses directed toward non-members.

Membership in the National Council of Churches: Churches whose denomination belongs to the National Council of Churches are more likely to be involved in church disaster response.

Benevolence giving: Churches whose denominations exhibit higher levels of benevolence giving are more likely to be involved in church disaster response.

Congregational Characteristics
Congregation age: No clear expectation.
Community orientation: Churches with a stronger community orientation are more likely to be involved in church disaster response.
Benevolence giving: Churches with higher levels of benevolence giving are more likely to be involved in church disaster response.
Spiritual vs. social role: Churches which view their role as more social rather than spiritual are more likely to be involved in church disaster response.
Active disaster role: Churches which view their role in a disaster as active rather than passive are more likely to be involved in church disaster response.
Particularism: Churches which are less particularistic are more likely to be involved in church disaster response.
Centralization: Churches whose pastors make most of the major decisions are more likely to be involved in church disaster response.
Complexity: Churches with more complex decision-making structures are more likely to be involved in church disaster response.
Member of the Xenia Area Inter-Faith Council: Churches which are members of XAIFC are more likely to be involved in church disaster response.

Characteristics of Pastor's Role
Administrative role: Churches whose pastors spend most of their time in administrative rather than pastoral activities are more likely to be involved in church disaster response.
Spiritual vs. social role: Churches whose pastors see
their role as not entirely spiritual are more likely to be involved in church disaster response.

Community involvement: Churches whose pastors were previously more involved in community activities are more likely to be involved in church disaster response.

Member Participation and Interaction
Communal vs. associational membership type: Churches with communal rather than associational membership types are more likely to participate in church disaster response.

Social class homogeneity: Churches whose members are homogeneous with regard to social class are more likely to participate in church disaster response.

Communication and participation: Churches with high levels of communication and participation are more likely to participate in church disaster response.

Measures - Sunday worship attendance
Sunday school attendance
Membership in men's, women's, and youth organizations
Number of Newsletters
Number of social occasions each month
Number of weekly worship services

Internal Resources
Congregational Resources
Annual budget: Churches with larger and increasing annual budgets are more likely to participate in church disaster response.
Congregational size: Churches with larger memberships are more likely to participate in church disaster response.
Congregational growth: Churches whose memberships are increasing in size are more likely to participate in church disaster response.
Number of paid staff: Churches with larger numbers of ministerial staff are more likely to participate in church disaster response.
Church building facilities: Churches with more building facilities (kitchens, sanctuaries, rooms) are more likely to participate in church disaster response.

Minister Characteristics
Age: Churches whose pastors are younger are more likely to participate in church disaster response. However, while younger pastors are expected to be more involved in relief activities,
older pastors are expected to be more involved in pastoral (counseling) activities.
Educational level: Churches whose pastors have higher levels of education are more likely to participate in church disaster response.
Tenure: Churches whose pastors have been at that congregation for moderate (as opposed to short or long) lengths of tenure are more likely to participate in church disaster response.

Member Characteristics
Age: Churches whose memberships are composed of fewer members over the age of 50 and under the age of 16 are more likely to participate in church disaster response.
Length of membership: Churches with more members who have been members for more than ten years are more likely to participate in church disaster response.
Social status: Churches whose members have higher levels of social status are more likely to participate in church disaster response.

External Resources
Denominational Resources
Number of churches: Churches whose denominations have larger numbers of member churches are more likely to participate in church disaster response.
Number of members: Churches whose denominations have larger numbers of members are more likely to participate in church disaster response.
Number of clergy: Churches whose denominations have larger numbers of clergy are more likely to participate in church disaster response.
Denominational budget: Churches whose denominations have larger budgets are more likely to participate in church disaster response.
Disaster relief unit: Churches whose denominations have a disaster relief unit are more likely to participate in church disaster response.

Organizational Demands
Damage to church facilities: Churches suffering moderate (as opposed to none or extreme) amounts of damage to church facilities are more likely to participate in church disaster response.
Damage to pastor's home: Churches which suffered damage to
their pastor's home are more likely to be involved in church disaster response.

Damage to members' homes: Churches suffering moderate (as opposed to none or extreme) amounts of damage to members' homes are more likely to participate in church disaster response.

Damage to business property: Churches suffering more damage to members' business property are more likely to participate in church disaster response.

Loss of work: Churches suffering larger numbers of work stoppages of members' jobs are more likely to participate in church disaster response.

Distance from disaster impact area: Churches closer to the disaster impact area are more likely to participate in church disaster response.
FOOTNOTES

1. Those role activities expected to be associated with church disaster response are 1) personal counseling with individuals who have problems, 2) programming and arranging church group activities, 3) leading in judicatory activities, 4) general calling hin homes, and 5) giving community leadership on crucial social issues.
CHAPTER IV

METHODOLOGY

It is the purpose of this chapter to discuss the data collection and analysis methods used for this study. To begin, the justification for using Xenia, Ohio as the location for the study will be presented. Following will be a discussion of the actual data collection instruments and processes used in Xenia. Since not every church responded to the questionnaire a test of response bias will also be presented. The chapter will conclude with a discussion of the analytical techniques used and a justification for their use.

Research Site

Having specified a framework to explain the functioning of organizations under normal conditions and having derived from the various empirical research literatures those factors which are expected to be associated with a strong disaster response by religious organizations, the next task is to discuss the collection of data with which the relationships can be tested and evaluated. A major criterion for selecting such a data set is that the area to be studied offers some variation in the independent variables. Such variation is common in most cities of 20-30,000 people and larger. Communities of this size would also provide enough individual congregational units to meet the minimum numerical requirements of statistical analysis. The final requirement is that the community be impacted by a disaster of sufficient size so as to create substantial disaster related tasks for the involvement of religious organizations.

Xenia has already been shown to meet these requirements. In terms of size, Xenia, in 1974, had a population of 25,000 people and was encircled by Greene County, population 125,000. Within Greene County there were 35 different church denominations represented by 138 individual church congregations ranging in approximate size from 10 to 3,200 members. Compared with the national average the make-up of the denominations tends to over-represent the conservative and fundamentalist, protestant theologies, with a number of Catholic Churches and no Jewish synagogues.
One-third of these congregations are situated in the city of Xenia. The remainder are located within a ten mile radius of Xenia. This location meets the criteria of size and diversity.

Finally, the Xenia-Greene County area also meets the requirements of experiencing severe damage as a result of a disaster. As was stated in Chapter 1, the April 3 tornado left 1,200 casualties, nearly half the population homeless, and severely damaged a major portion of the town including almost half of the community's churches. The resulting response of churches was quite extensive. Preliminary DRC interviews and newspaper accounts indicated churches being used as a Red Cross shelter, and a variety of emergency and long-term recovery activities. It was apparent that because of this involvement, the Xenia-Greene County area was suited to test the hypotheses presented in the preceding chapter.

Data Collection Techniques

The Local Church Questionnaire

Having shown Xenia to be a suitable location in which to study the response of churches to disaster the next step is to develop a data collection instrument. Utilizing information gained at the Disaster Research Center and items and scales developed by some of those researchers referenced in the preceding chapter a questionnaire was developed to measure those variables necessary to test the relationship between the pre-disaster context and characteristics of the demand-capability balance, the disaster conditions, and the resulting organizational response (see Appendix A). Most questionnaire items are quite general, measuring congregational make-up and the activities and characteristics of the pastor. These items were pre-tested on a small sample of (6) churches in the Columbus, Ohio area which are of the same general denominational make-up as those in the Xenia area. In general only minor phrasing changes were needed to make all questions clear and applicable to the full range of church denominations. Specific operationalization of each variable is presented in the summary in Appendix B.

Questions regarding the experiences and activities of churches following the tornado are both general (drawn from the general disaster literature) and specific to the situation as it existed in Xenia following the tornado. As part of normal DRC operations, many open ended interviews were conducted during the emergency period with members of organizations such as fire and
police departments, civil defense, governmental agencies, etc. associated with recovery activities. Hundreds of additional interviews, providing some additional general information about the church activities, were conducted in connection with DRC studies regarding the provision of mental health services and the emergence of an ecumenical disaster recovery organization. Newspapers were searched for information regarding damage, activities, mergers, resource collection, and other publicized church activities. Five in depth interviews were also conducted with the pastors of churches known to be involved in the community disaster response to develop an exhaustive list of both emergency and long-term church disaster recovery activities.

During this process it became apparent that church disaster response is not an easy behavior to measure. While some churches keep detailed records about their level of participation in recovery activities, most do not. Records of the amount of money spent were perhaps the best kept, although several pastors in both Xenia and Wilkes Barre stated that there was no accurate record of the number of people helped and the size of the financial gift. Records of feeding and sheltering provided, material goods distributed, and services rendered were even worse. Most churches could not give a quantitative measure of the amount of aid their church provided. This made it necessary to utilize simple participation in a broad range of disaster recovery activities as the sole indicator of church disaster response. Church disaster response is measured using the number of different response activities in which a church has participated.

To create an exhaustive list of church activities in Xenia the information gained from all DRC sources was utilized. This information resulted in the following list of emergency and long-term church activities.

RECOVERY ACTIVITIES DURING THE WEEK FOLLOWING THE TORNADO
- Providing emergency shelter
- Providing food for victims and workers
- Providing emergency clothing
- Holding special worship services
- Providing care and counseling for individuals
- Digging out church facilities
- Locating church members
- Providing money for individuals
- Providing money for community emergency activities
- Providing volunteer labor
- Providing space for emergency organizations
RECOVERY ACTIVITIES SINCE THE WEEK FOLLOWING THE TORNADO

Providing money to individuals
Providing furniture
Providing food
Providing clothing
Providing household items
Providing loans
Providing volunteer labor
Collecting special disaster offerings
Helping locate employment
Helping locate housing
Coordinating and/or housing outside work groups
Helping individuals in their dealings with relief agencies
Providing day care facilities
Providing summer camps for youth
Providing space for use by relief agencies
Providing worship facilities for use by other churches
Working with the Spirit of '74 Committee
Working with problems of the elderly
Helping organize the Xenia Thanksgiving Memorial Service
Participating in mental health training programs

Utilizing this information the disaster "experience and activity" section of the questionnaire was developed. This section was also pretested by submitting the questions to the Xenia Area Inter-Faith Council (XAIFC) for review. Because of its functioning as a center of many church disaster response activities in Xenia it was felt that the leaders of this organization would be aware of the vast variety of church experiences and activities in the community. Again, only minor changes in this section of the questionnaire were needed. Specific operationalization of each variable is presented in the summary in Appendix B. The completed questionnaire, cover letter, and return envelope were then assembled and readied for distribution (see Appendix A).

The Sample

It was determined to send the questionnaire to all churches in Greene County to obtain variation in damage and distance from the impact area. A list of Greene County churches was compiled using 1974 and 1975 phone books and a list of churches published in the Xenia newspaper following the tornado. From the differences in these three lists it is apparent that small churches frequently appear or disappear as a result of the establishment of chapels, mergers, and changes in interest and funding. From an initial list of 149 churches 138 were found that had mailing addresses. It is to this final list of 138 churches that questionnaires were sent.
Questionnaires were sent out at the end of July 1975, approximately 16 months after the impact of the tornado. Since the study is of organizational factors associated with church response it was determined that the information could be obtained most easily by addressing the questionnaires to the pastor of each church. Much difficulty was encountered when attempting to mail directly to the church since many churches use Post Office boxes for mail rather than the street addresses which were listed in the phone and newspaper information. Frequently a questionnaire was sent to several different church addresses, each time being returned by the Post Office, and was delivered only after being addressed to the pastor's residence.

Questionnaires were plainly marked with identification numbers to facilitate the follow-up procedure. After two weeks only 20% (N=27) of the questionnaires had been returned, so a follow-up post card was sent in mid-August. After two more weeks a total of 34% (N=47) had been returned. At this point phone calls were made to as many pastors as possible requesting their cooperation in completing the questionnaire. It was discovered that several pastors had never received anything in the mail and that many were on vacation during August. A second entire questionnaire and new cover letter were sent out just after Labor Day which brought the returned total as of September 14 to 53% (N=73). On September 14 a final post card reminder was sent out which brought in 10 final returns. This brought the overall response rate to 60% (N=83) during a return period of two months.

With such a strained and drawn out data collection process resulting in only 60% return of the questionnaires it is necessary to do a brief analysis of the composition of the return group as compared to the non-returns to determine if there is any response bias. To accomplish this comparison the return group is divided into early, middle, and late return groups approximately equal in size based on the postmark on the return envelope. If the returns are unbiased the characterization of the three groups on important variables should be the same. If the groups are different in make-up it may be possible to find a pattern or trend in the characterization of the three groups and extrapolate that trend from the latest return group to the non-return group to determine return bias (see Larson and Catton, 1959 for a complete explanation of the process). Confidence in the actual differences between the groups can be determined using standard significance measures.

Looking at Table 2 it can be seen that, with regard to overall disaster response, both the long and short term disaster responses are consistently but weakly related to questionnaire response time. Although the differences are not significant,
Table 2. Average Disaster Response Score by Questionnaire Response Time

<table>
<thead>
<tr>
<th>Type of Church</th>
<th>First</th>
<th>Middle</th>
<th>Last</th>
<th>F-Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disaster Response</td>
<td>Time Order of Questionnaire Response</td>
<td>Third</td>
<td>Third</td>
<td>Third</td>
</tr>
<tr>
<td>Short-term Community Response</td>
<td>11.21</td>
<td>9.96</td>
<td>8.80</td>
<td>1.39</td>
</tr>
<tr>
<td>Long-term Community Response</td>
<td>12.14</td>
<td>10.29</td>
<td>7.86</td>
<td>1.69</td>
</tr>
<tr>
<td>N = 28</td>
<td>N = 24</td>
<td>N = 30</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 3. Questionnaire Response Rate by Denomination

<table>
<thead>
<tr>
<th>Denomination</th>
<th>Response Rate</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>African Methodist Episcopal</td>
<td>67%</td>
<td>6</td>
</tr>
<tr>
<td>Baptist</td>
<td>57%</td>
<td>30</td>
</tr>
<tr>
<td>Catholic</td>
<td>100%</td>
<td>5</td>
</tr>
<tr>
<td>Church of Christ</td>
<td>83%</td>
<td>12</td>
</tr>
<tr>
<td>Church of God</td>
<td>50%</td>
<td>6</td>
</tr>
<tr>
<td>Friends</td>
<td>80%</td>
<td>5</td>
</tr>
<tr>
<td>Pentecostal</td>
<td>27%</td>
<td>11</td>
</tr>
<tr>
<td>United Church of Christ</td>
<td>60%</td>
<td>5</td>
</tr>
<tr>
<td>Methodist</td>
<td>93%</td>
<td>15</td>
</tr>
<tr>
<td>Presbyterian</td>
<td>60%</td>
<td>10</td>
</tr>
<tr>
<td>Other</td>
<td>59%</td>
<td>29</td>
</tr>
</tbody>
</table>
there is some indication that those churches that did not respond to the questionnaire were less involved in the disaster response than those who did respond. It is always more difficult to obtain cooperation from those respondents who are less involved in what is being studied but which are necessary for comparison purposes. Although noted, the differences in level of disaster response are not significant and should not present any major problem for the analysis.

The more general geographical and denominational make-up of the respondents and non-respondents can also be checked for biases. Regarding the city in which the churches are located, 62% of the churches in Xenia responded to the questionnaire. Compared with the overall response rate of 60% there is no indication that Xenia churches are overrepresented among the responding group. Finally, comparing the denominational make-up of respondents and non-respondents it can be seen in Table 3 that most denominational response rates are rather close to the overall 60% except for the unusually high response of Methodists and Catholics and the unusually low response of Pentecostals. The only apparent explanation of this finding is that the Methodist and Catholic churches may have been more involved in recovery activities, making them more likely to respond to the questionnaire. Pentecostal churches may have been less involved, making them less likely to respond. The overall evaluation of the responses received is that they tend to overrepresent churches that were more involved in disaster activities, although not to a degree that should affect the findings. Geographical location showed no bias and denominational make-up indicated some bias but no clear explanatory trends.

Measurement of Denominational Characteristics

The final set of data needed for the analysis deals directly with the characteristics of the larger denominational structure. While certain information, such as whether the denomination supplied local churches with disaster relief, is best obtained from local churches, most general statistical information regarding the denomination is best obtained from denomination offices. Large amounts of denominational statistics and information are already being collected by the Office of Research, Evaluation, and Planning of the National Council of Churches in Christ in the U.S.A. For this dissertation the Yearbook of American Churches 1970 and the Yearbook of American and Canadian Churches 1975 are utilized as sources of denominational information.

From these two sources data on National Council of Churches membership, complexity (the number of organizational sub-units),
number of churches, number of members, number of clergy, number of periodicals, frequency of meetings, total budget, and benevolence giving were obtained for most denominations. Five year trends for the number of churches and members, budget size, and amount of benevolence giving were determined by comparing the data for 1970 and 1975 and computing the changes. Specific operationalization of each variable is presented in Appendix B.

These two sources of data simplify considerably the data collection process for denominational characteristics. It should be recognized, however, that such church statistics are subject to problems. To begin, many denominations do not make this information available. In addition, churches who listed their denomination on the questionnaire as simply Baptist, Friends, or Pentecostal cannot be included because of the numerous bodies which all share the same general label. Even if the data are available, accuracy is also a problem. Statistics are frequently not current, utilize different definitions of characteristics, or are distorted by those wishing to present a good public image. Trends are also distorted by mergers and schisms as well as other "normal" circumstances. However, since no better source of such data exists the National Council of Churches data are used.

Data Analysis

The Statistical Package for the Social Sciences (SPSS) is used throughout to provide tests of significance and measures of association between the predictive elements of the conceptual framework (pre-disaster demand-capability balance and disaster conditions) and the organizational consequences (involvement in church disaster response).

Composite Measures

Throughout this study multiple-scale items are used to measure single variables. In order to provide some indication of the reliability of these indexes a reliability scale is presented (see Appendix B for each composite indicator). The measure of reliability used is Cronbach's alpha, which is the mean of all split-half reliabilities. Using alpha it is possible to evaluate the reliability of the multiple-scale items used in this dissertation.

In the analysis percentages are computed for several of the variables in an attempt to control for the effect of size. For
example, the number of church members suffering certain types of damage reflects more the impact of the demands on the congregation if the percentage of congregation members suffering this damage is used. In addition, while the measures of church attendance, budget size, and benevolence giving indicate absolute amounts of each characteristic, each characteristic measured as a percent of the membership size increases its measurement of membership commitment rather than membership size. When several church characteristics are compared they are discussed using both the absolute measure and the measure as a percent of the whole.

Significance Tests

It is possible to question the use of significance tests at all since, as Galtung (1969:364) states, "statistical tests are out of order if we do not have a sample." In this instance, the use of significance tests is justified if one considers the 83 responding churches as an approximation (sample) of the universe of Xenia churches. The purpose of this dissertation is not to test the significance of the relationships with regard to all churches. Rather its purpose is to determine how confident one is that the associations found among the responding churches actually exist in the community. Although the 83 churches were not intentionally selected with any sampling model in mind, it has been shown that the responding churches are roughly representative with respect to two background characteristics and only slightly overrepresent churches that were active following the tornado. Since it appears that systematic response biases are small it is assumed that the errors are randomly distributed and that statistical inference techniques should be used to test the null hypothesis that the findings are due to imperfection.

The significance level used in this dissertation for one-tailed tests is 0.05. However, it is realized that the significance level is the probability of the relationship being due to chance and is not a measure of the research significance of the association. Understanding the limits of any level of significance, the interpretations are made taking into account the meaning of this convention.

Measures of Association

It is also necessary to compute measures of association which indicate to what extent variation in the dependent variable is associated with variation in the independent variable. It is
best, in an exploratory study such as this, to utilize robust measures of association. These measures give a clear indication of the bivariate associations which can be studied in further detail later and have the potential to utilize strong multivariate techniques in the development of more complex explanations. However, since many of the variables in this study are measured at a nominal or ordinal level, the use of such techniques could be questioned by researchers who feel that it is permissible to use parametric techniques only with scores which are truly numerical (Siegel, 1956:3).

In contrast, more recent writers have studied the actual effect of using parametric techniques with measuring instruments of the nominal and ordinal levels and have come to the opposite conclusion. Bohrnstedt and Carter (1971:131-132) conclude that "even though some error in inference may occasionally be made by using ordinal data with parametric techniques, the increase in power makes the risk seem small."

As a result of its robustness, its ease of statistical elaboration with a small sample, and its ease of interpretation, correlation analysis is used as the measure of association for ordinal, interval, and dichotomous nominal data. Significance tests for the correlation coefficients are derived using Student's t with N-2 degrees of freedom.

Multivariate Analysis

Sociology as a discipline is not interested in presenting long exhaustive lists of determinants, but searches for a parsimonious explanation including only the most important explanatory factors. For example, if fifteen church characteristics are significantly associated with emergency community response how many of the list are necessary to provide an adequate explanation? In addition, even though some church characteristics are significantly associated with church disaster response, how important is a correlation of .18 or .19? And finally, how much does a variable, even one which is correlated .40 with church disaster response, add to the understanding of the dependent variable after controlling for the explanatory power of other variables? Providing a parsimonious explanation requires answering all of these questions.

Standard step-wise multiple regression is used to provide an overall understanding of the explanatory factors of church disaster response. To accomplish this task lists of all church characteristics significantly associated with church disaster
response are compiled. In cases where two of the independent variables are highly interrelated (correlations greater than .80) the variable with the lowest correlation with disaster response is deleted to reduce the problem of covariation. The remaining variables are then input into the program. The result is a list of variables ordered according to their betas, a measure of the strength of the association with the dependent variable independent of the effects of other confounding variables.

In order to determine when to stop adding variables to the regression equation three criteria are used. First, the coefficients regarded as important must be significant. Significance is determined using the F-ratio computed for each coefficient. The significance test is the most conservative parameter used for determining what variables are included in the regression since the number of cases is small. The degrees of freedom for the F-ratios are based on the minimum number of cases used to compute the correlations included in the equation. The second criterion is that the Beta is at least .15 and preferably .20. The final criterion is that the added explained variance for each explanatory variable be at least .02. Using these three criteria insures choosing only the most important variables for the regression equation.

The result of using such an analysis is a list of the most important independent factors in predicting disaster response and a measure of the independent effects of each variable. With such information it is much easier to indicate the importance of each element of the analytical framework for the explanation of church disaster response.

Multiple regression, however, should not be used without question despite its apparent strengths. Some mention has already been made of the violation of some of the assumptions regarding the interval measurement of each variable. However, while it seems clear that errors in measurement affect the number of statistically significant r's in only minor ways, parameter estimation in regression analysis can be seriously affected by such errors (Bohrstedt and Carter, 1971:132). Regression coefficients and partial-correlation coefficients may be overestimated or underestimated while the coefficient of determination R^2 is always attenuated when errors in measurement are present. Regression analysis, in cases such as this, should be used carefully.

There is also a problem with the sample size which may lead to more significant limitations. When correlations are computed between two variables all cases which answered both questions are included in the computation. For this analysis most correlations are computed using approximately 70 cases. Using multiple
regression analysis only cases which answer all questions being considered are utilized. For this study the number of cases answering all the questions significantly associated with disaster response is often less than 20. Not only does it become difficult to attach much significance to these statistics, but the correlations actually change since they are based on a different case. The only solution is to use a regression analysis which uses correlations computed with only a pair-wise elimination of cases with missing values. This can result in betas greater than one and negative F-ratios as tests of significance. Recognizing these limitations multiple regression analysis is used only as a technique to suggest some overall summary of the findings in a standardized form. It should be re-emphasized that it is only a very tentative summary and care should be used in interpreting the findings.

Summary

To summarize, the 138 individual churches located in Greene County, Ohio were shown to meet the criteria necessary to be useful for a study of the disaster response of religious organizations. A questionnaire measuring the variables specified in the model was developed and distributed to the churches. Analysis of early and late returners of the 83 questionnaires (60%) showed that there is no significant response bias with regard to disaster response, denomination, or location of the city. Other data were collected from the Yearbook of American and Canadian Churches 1975. The actual statistical analysis uses parametric techniques computed using an S.P.S.S. package. The use of parametric techniques as measures of association and regression as a measure of multivariate analysis was justified on the grounds that for an exploratory study using many explanatory variables the increase in power makes the risk seem small.
FOOTNOTES

1. The denominations included Catholic, Church of the Nazarene, Lutheran, Methodist, Reformed, and Presbyterian.

2. For a discussion and computational formula for alpha see Armor, 1974.
CHAPTER V

FINDINGS

In this chapter the empirical findings of the study will be discussed, hypotheses will be restated and measures of significance and association will be presented. Discussion in this chapter will be limited to the significance levels, measures of association, and trends for each variable or group of variables. Comment on the overall findings will be reserved for Chapter VI.

Church Disaster Response

Questionnaire responses indicated that the churches in the Xenia-Greene County area suffered extensive damage. Approximately 25% of the 64 churches in the Xenia area were totally destroyed. Another 25% suffered some damage. The average church loss due to tornado damage was $100,000 with one damage claim totaling $1,000,000. Most of the losses to church property were covered by insurance although several pastors commented that the insurance was inadequate. Except for those churches suffering major or total destruction, most churches were able to conduct services in the damaged structures. Those churches most severely damaged had to wait more than six months for the completion of rebuilding programs. A few churches found mergers to be a more viable alternative than rebuilding.

Congregational members also suffered extensive damage. For the entire county, churches averaged 20 of 152 households that suffered damage, almost 7 of these total damage. In addition, an average of three households suffered injury, eleven households suffered from a loss of work, and 10% of the congregations experienced at least one death. Almost 25% of the clergy in Greene County also suffered damage to their homes. The clergy of 55% of the congregations were also called upon for counseling regarding personal problems related to the tornado, having an average case load of fourteen members per pastor. The impact of the tornado was obviously very devastating to the religious community.

The response of community churches to the disaster was quite impressive. Church response is measured by two questions
which ask pastors to check those activities in which their con­
gregation, as a congregation, was involved following the tornado. The two questions distinguish between emergency and long-term recovery activities. From these data it is estimated that only 7% of the Greene County churches were not involved in emergency recovery activities during the first week. A larger number, 16% were not active after the first week. The actual percentages of churches participating in each activity are presented in Tables 4 and 5.

Pastors were also asked to indicate whether aid was pro­vided for church members only, or for the community in general. As a result, church response is distinguishable with regard to whether activities were performed during the emergency or long­term recovery periods and with regard to its inner or outer directed quality. As can be seen in Tables 6 and 7, churches are well distributed on overall church response, making possible the explanation of the variation. The ranges of churches providing aid for congregation members only are not as well distributed, but provide additional response indicators of the inner directed or outer directed quality of church response. Although analysis will be provided for member only response it should be remembered that only 35 to 50 percent of the churches provided any relief activities for congregation members only. These numbers are very small and should be interpreted carefully.

Denominational groupings were also quite active in recovery activities. Almost 50% of the denominations reported combining to form a unified relief program for some purposes, although not all Greene County churches of those denominations participated. Many other denominational organizations, such as the Mennonite Disaster Service, Brethren Disaster Service, Catholic Social Service, Greater Dayton Association of Baptist Churches, West Ohio United Methodist Conference, and many others were also quite active.

Although there were some ecumenical activities carried on by the somewhat distant Metropolitan Churches United of Dayton, most ecumenical activities were carried on by the Xenia Area Inter-Faith Council which emerged and was incorporated within two weeks after the tornado. The emergence of this organization was not totally initiated from within. Rather, its emergence was aided and encouraged by the director of a similar ecumenical disaster organization which developed in Wilkes Barre, Pennsyl­vania following hurricane Agnes in 1972.

In Wilkes Barre the first three months of church disaster recovery activities were organized by the larger denominations or individual congregations. The resources and enthusiasm for these
Table 4. Emergency Recovery Activities During the Week Following the Tornado

<table>
<thead>
<tr>
<th>Percent Churches Active in Recovery Activities</th>
<th>Emergency Recovery Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>51%</td>
<td>Provided emergency shelter</td>
</tr>
<tr>
<td>76%</td>
<td>Provided food for victims and workers</td>
</tr>
<tr>
<td>80%</td>
<td>Provided emergency clothing</td>
</tr>
<tr>
<td>18%</td>
<td>Held special worship services</td>
</tr>
<tr>
<td>43%</td>
<td>Provided care and counseling for individuals</td>
</tr>
<tr>
<td>20%</td>
<td>Dug out church facilities</td>
</tr>
<tr>
<td>55%</td>
<td>Located church members</td>
</tr>
<tr>
<td>72%</td>
<td>Provided money for individuals</td>
</tr>
<tr>
<td>42%</td>
<td>Provided money for community emergency activities</td>
</tr>
<tr>
<td>72%</td>
<td>Provided volunteer labor</td>
</tr>
<tr>
<td>45%</td>
<td>Provided space for emergency organizations</td>
</tr>
</tbody>
</table>

Table 5. Recovery Activities Since the Week Following the Tornado

<table>
<thead>
<tr>
<th>Percent Churches Active in Recovery Activities</th>
<th>Long-Term Recovery Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>58%</td>
<td>Provided money to individuals</td>
</tr>
<tr>
<td>33%</td>
<td>Provided furniture</td>
</tr>
<tr>
<td>59%</td>
<td>Provided food</td>
</tr>
<tr>
<td>67%</td>
<td>Provided clothing</td>
</tr>
<tr>
<td>35%</td>
<td>Provided household items</td>
</tr>
<tr>
<td>5%</td>
<td>Provided loans</td>
</tr>
<tr>
<td>49%</td>
<td>Provided volunteer labor</td>
</tr>
<tr>
<td>48%</td>
<td>Collected special disaster offerings</td>
</tr>
<tr>
<td>10%</td>
<td>Helped locate employment</td>
</tr>
<tr>
<td>28%</td>
<td>Helped locate housing</td>
</tr>
<tr>
<td>10%</td>
<td>Coordinated and/or housed outside work groups</td>
</tr>
<tr>
<td>30%</td>
<td>Helped individuals in their dealings with relief agencies</td>
</tr>
<tr>
<td>2%</td>
<td>Provided day care facilities</td>
</tr>
<tr>
<td>7%</td>
<td>Provided summer camps for youth</td>
</tr>
<tr>
<td>21%</td>
<td>Provided space for use by relief agencies</td>
</tr>
<tr>
<td>14%</td>
<td>Provided worship facilities for use by other churches</td>
</tr>
<tr>
<td>11%</td>
<td>Worked with the Spirit of '74 Committee</td>
</tr>
<tr>
<td>17%</td>
<td>Worked with problems of the elderly</td>
</tr>
<tr>
<td>12%</td>
<td>Helped organize the Xenia Thanksgiving Memorial Service</td>
</tr>
<tr>
<td>15%</td>
<td>Participated in mental health training programs</td>
</tr>
</tbody>
</table>
Table 6. Distribution of Community Church Response

<table>
<thead>
<tr>
<th>Number of Activities</th>
<th>Emergency Response</th>
<th>Long-Term Response</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>0</td>
<td>6</td>
<td>7.2</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>3.6</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
<td>4.8</td>
</tr>
<tr>
<td>4</td>
<td>6</td>
<td>7.2</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
<td>1.2</td>
</tr>
<tr>
<td>6</td>
<td>2</td>
<td>2.4</td>
</tr>
<tr>
<td>7</td>
<td>4</td>
<td>4.8</td>
</tr>
<tr>
<td>8</td>
<td>9</td>
<td>10.8</td>
</tr>
<tr>
<td>9</td>
<td>3</td>
<td>3.6</td>
</tr>
<tr>
<td>10</td>
<td>4</td>
<td>4.8</td>
</tr>
<tr>
<td>12</td>
<td>10</td>
<td>12.0</td>
</tr>
<tr>
<td>13</td>
<td>3</td>
<td>3.6</td>
</tr>
<tr>
<td>14</td>
<td>9</td>
<td>10.8</td>
</tr>
<tr>
<td>15</td>
<td>3</td>
<td>3.6</td>
</tr>
<tr>
<td>16</td>
<td>7</td>
<td>8.4</td>
</tr>
<tr>
<td>17</td>
<td>4</td>
<td>4.8</td>
</tr>
<tr>
<td>18</td>
<td>3</td>
<td>3.6</td>
</tr>
<tr>
<td>19</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>20</td>
<td>1</td>
<td>1.2</td>
</tr>
<tr>
<td>22</td>
<td>1</td>
<td>1.2</td>
</tr>
<tr>
<td>24</td>
<td>5</td>
<td>6.0</td>
</tr>
<tr>
<td>25</td>
<td>1</td>
<td>1.2</td>
</tr>
<tr>
<td>26</td>
<td>2</td>
<td>2.4</td>
</tr>
<tr>
<td>32</td>
<td>1</td>
<td>1.2</td>
</tr>
<tr>
<td>38</td>
<td>1</td>
<td>1.2</td>
</tr>
<tr>
<td>No Answer</td>
<td>2</td>
<td>2.4</td>
</tr>
</tbody>
</table>

Table 7. Distribution of Member Church Response

<table>
<thead>
<tr>
<th>Number of Activities</th>
<th>Emergency Response</th>
<th>Long-Term Response</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>0</td>
<td>42</td>
<td>50.6</td>
</tr>
<tr>
<td>1</td>
<td>10</td>
<td>12.0</td>
</tr>
<tr>
<td>2</td>
<td>11</td>
<td>13.3</td>
</tr>
<tr>
<td>3</td>
<td>7</td>
<td>8.4</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>6.0</td>
</tr>
<tr>
<td>5</td>
<td>2</td>
<td>2.4</td>
</tr>
<tr>
<td>6</td>
<td>2</td>
<td>2.4</td>
</tr>
<tr>
<td>7</td>
<td>3</td>
<td>3.6</td>
</tr>
<tr>
<td>8</td>
<td>1</td>
<td>1.2</td>
</tr>
<tr>
<td>16</td>
<td>1</td>
<td>1.2</td>
</tr>
</tbody>
</table>
separate activities soon dwindled leading to the discussion and later organization of an ecumenical disaster relief agency. Even after the activities were fully developed this organization was not incorporated until three or four months later. Its development was quite slow and belabored.

Because of the influence of the Wilkes Barre director immediate steps were taken to organize the churches in the Xenia-Greene County area. Much of the structure of the organization was borrowed to eliminate many of the problems faced by this Wilkes Barre group. The Xenia Area Inter-Faith Council was incorporated in only two weeks and included an estimated two-thirds of the churches in Greene County. (For a more in depth discussion of the emergence of inter-faith disaster recovery groups see Ross and Smith, 1974 and Ross, 1976.)

Having briefly described the disaster response of churches in Xenia following the 1974 tornado it is now necessary to test the proposed explanation of this disaster response.

**Normative/Structural Capabilities and Church Response**

**Denominational Characteristics**

It has already been suggested that a major portion of a congregation's normative component is derived from the larger denominational body to which it belongs. The effect of denominational characteristics on a congregation can be both direct, as with the imposition of a certain type of authority structure on the congregation, or indirect, as with the efficiency of one type of denominational structure as compared with another. Churches belonging to denominations with a more centralized authority structure (polity), with a more complex denominational structure, with a more liberal theology, and which belong to the National Council of Churches are expected to be more involved in church disaster response.

Looking at the correlations between denominational characteristics and church disaster response found in Table 8 it can be seen that there are some small significant relationships. Focusing first on church polity, churches whose denominational structure tends to be more episcopal are also more involved in long-term community response. The insignificant association with emergency response may be a result of the inherent difficulty of getting national level organizations involved in emergency period (first week) responses. Polity is also associated with both
Table 8. Correlations Between Denominational Characteristics and Disaster Response

<table>
<thead>
<tr>
<th>Variable</th>
<th>Type of Disaster Response</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Emergency Community Response</td>
<td>Long-Term Community Response</td>
<td>Emergency Member Response</td>
<td>Long-Term Member Response</td>
<td></td>
</tr>
<tr>
<td>Polity (Congregational to Episcopal)</td>
<td>r= .04</td>
<td>.22*</td>
<td>.21*</td>
<td>.22*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N= 77</td>
<td>77</td>
<td>77</td>
<td>77</td>
<td>77</td>
</tr>
<tr>
<td>Complexity (Number of Denomination Organizations)</td>
<td>r= .33**</td>
<td>.25*</td>
<td>-.23*</td>
<td>-.17</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N= 54</td>
<td>54</td>
<td>54</td>
<td>54</td>
<td>54</td>
</tr>
<tr>
<td>Number of Denominational Meetings</td>
<td>r= -.14</td>
<td>-.13</td>
<td>.31*</td>
<td>.15</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N= 53</td>
<td>53</td>
<td>53</td>
<td>53</td>
<td>53</td>
</tr>
<tr>
<td>Number of Denominational Periodicals</td>
<td>r= .26*</td>
<td>.18</td>
<td>-.28*</td>
<td>-.16</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N= 49</td>
<td>49</td>
<td>49</td>
<td>49</td>
<td>49</td>
</tr>
<tr>
<td>Theology (Liberal to Conservative)</td>
<td>r= .17</td>
<td>.39***</td>
<td>.21*</td>
<td>.14</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N= 61</td>
<td>61</td>
<td>61</td>
<td>61</td>
<td>61</td>
</tr>
<tr>
<td>Benevolence Giving</td>
<td>r= .32*</td>
<td>.21</td>
<td>-.29*</td>
<td>-.21</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N= 38</td>
<td>38</td>
<td>38</td>
<td>38</td>
<td>38</td>
</tr>
<tr>
<td>Five Year Increase In Benevolence Giving</td>
<td>r= .13</td>
<td>.04</td>
<td>.10</td>
<td>-.14</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N= 34</td>
<td>34</td>
<td>34</td>
<td>34</td>
<td>34</td>
</tr>
<tr>
<td>National Council of Churches Membership</td>
<td>r= .32**</td>
<td>.34***</td>
<td>.07</td>
<td>.06</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N= 83</td>
<td>81</td>
<td>83</td>
<td>83</td>
<td>83</td>
</tr>
</tbody>
</table>

*p < .05
**p < .01
***p < .001
emergency and long-term responses for congregation members only
suggesting that a centralized denominational authority structure
is associated with any type of disaster response regardless of its
purpose.

Complexity, the second denominational variable, is positively
associated with both emergency community response \((r=.33)\) and
long-term community response \((r=.25)\). Churches whose denominational
structures are more diversified and are formally organized are more
involved in a wide variety of activities. The more complex they
are, the more likely they are to have existing structures with
which to meet unique types of demands following a disaster. It is
interesting to note that complexity is negatively associated with
both types of responses for members only. It appears that churches
belonging to denominations without complex structures are not in-
active, but organize to provide an inner-directed response. It
may be that without the support of a complex denominational struc-
ture the only type of response that is organized is a smaller,
inner-directed response.

Normative/structural characteristics of denominations also
include norms regarding the availability of denominational re-
sources for congregational disaster response. The number of de-
nominational meetings indicates to some degree the interaction
between the local and national denominational levels of organiza-
tion. It is expected that higher levels of interaction will re-
sult in more denominational aid and a more active disaster re-
sponse. Looking at Table 8 it can be seen that there is one
significant association but it is with emergency member response
\((r=.31)\). Long-term member response is also positively associated
with the number of denominational meetings while community re-
sponses show a negative association. It may be that the number
of denominational meetings is linked to some other variables such
as size or theology which tend to limit its association to member
responses.

The number of denominational periodicals is also an indi-
cator of intra-denominational interaction and interest in keeping
congregation members informed of church affairs. An interest in
the dissemination of information to the congregations is found to
be positively associated with community disaster response and
negatively associated with member response at the congregational
level. While frequent denominational meetings tend to be asso-
ciated with inner-directedness the number of periodicals is
associated with outer-directedness.

Church response is also associated with theology. As can
be seen in Table 8, theology is most strongly associated with
long-term community response \((r=.39)\). Churches with more liberal
theologies are likely to be more involved in long-term community response. However, contrary to what was expected, a more liberal theology is also significantly associated with an emergency response for congregation members only. There appears to be a slight tendency for a liberal theology to be associated with any type of disaster response, with the strongest association being a long-term response aimed at the community in general.

The amount of benevolence monies received by a denomination is both a resource and a measure of the importance for programs other than organizational maintenance. Denominations with larger amounts of benevolence monies are both able and historically willing to participate in programs such as disaster relief. As expected, benevolence giving is associated with disaster response for members only. It appears that if a denomination has a large amount of benevolence giving it is accompanied by a "help others" orientation at all levels. The lack of benevolence does not indicate a total unwillingness to help, but is associated with a willingness and ability to help members only.

The five year trend in benevolence giving shows a slight tendency for an increase in benevolences at the denominational level to be positively associated with both types of emergency response and negatively associated with a long-term member response. However, all of these associations are insignificant.

The final element of denominational normative structure is National Council of Churches (NCC) membership. It has already been stated that a major shared element of NCC members is their willingness to participate in this national ecumenical organization. It appears quite logical to also expect churches of these member denominations to be more involved in disaster response for the community in general. The data support this with significant correlations found with both types of community response and no association with response for members only.

It appears that several hypotheses regarding denominational characteristics of churches are supported to some extent. Churches developing more varied community disaster response are more likely to belong to denominations characterized by an episcopal authority structure, more complex structures, more periodicals, more liberal theologies, and belonging to the National Council of Churches.
Church Characteristics

The next aspect of the normative/structural characteristics to be considered is that of the congregations themselves. Factors considered include a whole range of structural variables and variables linked with the normative/structural characteristics of the congregation as a unit. The measures of association and tests of significance for these characteristics are presented in Table 9.

To begin, congregational age has been shown by several researchers to be both positively and negatively associated with congregational activities. It can be seen in Table 9 that congregational age tends to be positively associated with overall community response. This association is significant for long-term community response ($r=.21$). Congregation age shows no association with response for members only. It is possible that congregation age is not related to disaster response in a linear fashion. However, examination of congregation age with all four types of disaster response using a scattergram indicates no recognizable curvilinear associations. There appears to be a small positive association between community disaster response and the length of time a congregation has been in existence.

Community orientation is measured by the number of community activities in which a congregation was active prior to the tornado. It is expected that pre-disaster community orientation will carry over into the post-disaster period resulting in a strong community disaster response. Table 9 shows that both the emergency and long-term community responses are associated with community orientation. The hypothesis is also consistent with the lack of association with disaster response for members only. As Dynes (1974) indicated, community orientation appears to be an important variable in the determination of community disaster response.

Benevolence giving is also a pre-disaster indicator of congregational outer-directedness. Congregations with higher levels of benevolence giving are expected to be more active following a disaster. As can be seen in Table 9, the total amount of benevolence giving is significantly related to both types of community disaster response. However, when benevolence giving is altered into benevolence giving per member the association is reversed and reduced. It appears that it is not the amount of giving by each member, but the total dollar amount collected which is associated with disaster response. An increase in benevolence giving for 1974-1975 is also not associated with disaster activities. Rather it is the sheer size of the benevolence budget line which appears to be related with community disaster response. It appears that congregational size is a
Table 9. Correlations Between Normative/Structural Church Characteristics and Disaster Response

<table>
<thead>
<tr>
<th>Variable</th>
<th>Type of Disaster Response</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Emergency Community Response</td>
<td>Long-Term Community Response</td>
<td>Emergency Member Response</td>
<td>Long-Term Member Response</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N= 74</td>
<td>N= 74</td>
<td>N= 74</td>
<td>N= 74</td>
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</tr>
<tr>
<td>Congregation Age</td>
<td>r= .16</td>
<td>.21*</td>
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<td></td>
<td>N= 70</td>
<td>70</td>
<td>70</td>
<td>70</td>
<td></td>
</tr>
<tr>
<td>Community Orientation</td>
<td>r= .34**</td>
<td>.55***</td>
<td>.06</td>
<td>.07</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N= 55</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td></td>
</tr>
<tr>
<td>Benevolence Giving Per Member</td>
<td>r= -.05</td>
<td>-.10</td>
<td>-.11</td>
<td>-.05</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N= 52</td>
<td>52</td>
<td>52</td>
<td>52</td>
<td></td>
</tr>
<tr>
<td>Increase in Benevolence Giving Per Member</td>
<td>r= .04</td>
<td>.15</td>
<td>.00</td>
<td>.09</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N= 42</td>
<td>42</td>
<td>42</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>Particularism</td>
<td>r= .09</td>
<td>-.13</td>
<td>.00</td>
<td>.07</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N= 75</td>
<td>75</td>
<td>75</td>
<td>75</td>
<td></td>
</tr>
<tr>
<td>Number of Decision-Making Bodies</td>
<td>r= -.03</td>
<td>-.02</td>
<td>-.11</td>
<td>-.19</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N= 69</td>
<td>69</td>
<td>69</td>
<td>69</td>
<td></td>
</tr>
<tr>
<td>Number of Decision-Making Leaders</td>
<td>r= -.05</td>
<td>-.07</td>
<td>.05</td>
<td>-.20</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N= 75</td>
<td>75</td>
<td>75</td>
<td>75</td>
<td></td>
</tr>
<tr>
<td>Centralization (Number of Clergy Decisions)</td>
<td>r= .05</td>
<td>.00</td>
<td>.04</td>
<td>.04</td>
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</tr>
<tr>
<td></td>
<td>N= 75</td>
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<td>75</td>
<td>75</td>
<td></td>
</tr>
<tr>
<td>Importance of Social (vs. spiritual) role</td>
<td>r= .19*</td>
<td>.26*</td>
<td>-.09</td>
<td>.11</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N= 77</td>
<td>77</td>
<td>77</td>
<td>77</td>
<td></td>
</tr>
<tr>
<td>Active Disaster Role</td>
<td>r= .23*</td>
<td>.21*</td>
<td>.10</td>
<td>.37***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N= 77</td>
<td>77</td>
<td>77</td>
<td>77</td>
<td></td>
</tr>
<tr>
<td>Member of Xenia Area Inter-Faith Council</td>
<td>r= .52***</td>
<td>.63***</td>
<td>-.01</td>
<td>.20*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N= 80</td>
<td>79</td>
<td>80</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>Positive Support by Denomination to Join XAIFC</td>
<td>r= .42***</td>
<td>.60***</td>
<td>.05</td>
<td>.08</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N= 76</td>
<td>76</td>
<td>76</td>
<td>76</td>
<td></td>
</tr>
</tbody>
</table>

*p < .05  
**p < .01  
***p < .001
possible important variable in explaining church disaster response which may partially explain away the relationships found with other variables.

Particularism is a religious attitude that one's own religious belief system is the only way to reach salvation. It is expected that particularistic congregations are less likely to help others, especially non-members, following a disaster than other churches. The results show insignificant associations in the predicted directions. Particularistic churches show a slight tendency to be less likely to develop a long-term community response.

Insignificant relationships with disaster response are also found for the two measures of congregational complexity (the number of congregational decision-making bodies and the number of organizational decision-making leaders) and the measure of centralization of authority (the number of congregational decisions made by clergy). Only one weak relationship, that less complex congregational structures tend to be a little more active in long-term responses for members only, is found. None of the other structural variables have any association with disaster response.

Another variable linked with the normative aspects of a congregation is whether the role of the church is seen as "sticking to religion" or playing an active role in the social, economic, and political spheres. In this study, those churches which characterize themselves as secularly active are also found to have been more active in both emergency community response ($r=.19$) and long-term community response ($r=.26$). The concept of church role can be more closely linked to disaster situations by another question asking churches whether they should play an active or a passive disaster role. Again, churches which see their disaster role as active are significantly more involved in all but the emergency member response. In summary, a church's perception of its role as more secularly involved in the general social world and in a disaster situation is associated with its activities following a disaster.

Finally, although there was no Xenia Council of Churches to which congregations could join, they were able to join the Xenia Area Inter-Faith Council after it emerged. It is difficult to test whether joining Inter-Faith is just incidental to a strong disaster response or whether joining Inter-Faith involved congregations in disaster activities. The direction of the causal relations is impossible to determine. Regardless, there is a moderately large association between membership in Inter-Faith and participation in emergency and long-term disaster response.
Each is the logical extension of the other since it appears difficult to maintain a strong congregational disaster response for a long period of time without depending on outside aid and membership in Inter-Faith would further involve congregations in disaster recovery activities. Support by the denominational organization to join the Xenia Area Inter-Faith Council is also moderately associated with a strong emergency and long-term disaster response. This positive orientation toward such ecumenical activities by both denominational and local congregational bodies appears to be quite strongly associated with congregational disaster activities.

To summarize, on the congregational level the strongest associations appear to be between the normative aspects of the normative/structural characteristics. This includes community orientation, total benevolence giving, joining the Xenia Area Inter-Faith Council, and denominational support for the XAIFC. Lesser, but still significant associations, are found between increasing congregational age, a general positive congregational picture, and active social and disaster orientations. Particularism and the more structural elements, congregational complexity and centralization of authority show no association with church disaster response.

Pastoral Role

The final component of the normative/structural characteristics are those characteristics of the pastor which are associated with the normative/structural aspects of organizational functioning. These factors include the amount of time clergy spend performing administrative tasks, the importance of social, as well as spiritual involvement, and a measure of pre-disaster community involvement. The findings for these variables are presented in Table 10.

Looking first at the association between administrative role and disaster response, it is expected that those pastors spending more of their time on administrative tasks will be more likely to provide strong administrative support to their congregations necessary for a more active disaster response. As can be seen in Table 10 the associations between the pastor's administrative role and church disaster response are all insignificant except for the relationship with a long-term community response (r=.19). Apparently actions by congregations following a disaster are only somewhat associated with the pre-disaster administrative tasks of their pastors. However, the fact that a strong administrator is more successful in organizing a long-term community response tends to be supported by the data.
Table 10. Correlations Between Pastoral Normative Characteristics and Disaster Response

<table>
<thead>
<tr>
<th>Variable</th>
<th>Type of Disaster Response</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Emergency</td>
<td>Long-Term</td>
<td>Emergency</td>
<td>Long-Term</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Community Response</td>
<td>Community Response</td>
<td>Member Response</td>
<td>Member Response</td>
<td></td>
</tr>
<tr>
<td>Pastor's Administrative Role</td>
<td>r= .04</td>
<td>.19</td>
<td>.03</td>
<td>.02</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N= 60</td>
<td>60</td>
<td>60</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>Pastor's Social Involvement</td>
<td>r= .08</td>
<td>.20*</td>
<td>.06</td>
<td>.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N= 75</td>
<td>75</td>
<td>75</td>
<td>75</td>
<td></td>
</tr>
<tr>
<td>Pastor's Community Involvement</td>
<td>r= .44***</td>
<td>.44***</td>
<td>.05</td>
<td>-.05</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N= 73</td>
<td>73</td>
<td>73</td>
<td>73</td>
<td></td>
</tr>
</tbody>
</table>

*p < .05
***p < .001
Whether pastors see their roles solely as spiritual leaders or also as leaders and advocates in the social, economic, and political realms is expected to affect the disaster response a congregation is able to organize. Again, the only significant finding between the importance of the social role and disaster response is with long-term community response \((r=.20)\). While the original expectation is that social involvement should be associated with an emergency response also, it may be that helping people who need food, shelter, and clothing immediately is also compatible with a spiritual role, thus eliminating any association. However, it is meaningful that there is an association between the type of a pastor's pre-disaster social involvement and a long-term community response.

The final pastoral characteristic is a measure of a pastor's pre-disaster community involvement similar to that of the congregation. As before, it is expected that community activism on the part of the pastor should carry over into the post-disaster time period thereby increasing the likelihood of an active disaster response. The data support this expectation for all but the emergency member response. The other response types are significantly correlated. It is interesting to note that congregational orientation is not associated with a long-term member response while the strongest association with the pastor's previous community involvement is with that type of response. It may be that while a pastor's community involvement is associated with a strong response of any type, the pastor's involvement may be mediated through a strong need or demand for a response by congregation members. Despite these possible complex interpretations, a pastor's community involvement is associated with all types of disaster response, except for emergency member response.

The normative/structural characteristics of pastors appear to have supported the trend of the importance of orientational types of variables, found important in the preceding section on congregational characteristics, and the denominational characteristics of theology and National Council of Churches membership. The findings in all three components of the normative/structural characteristics tend to support Dynes' general assertion that one of two major determinants of disaster response is community orientation.

**Member Participation and Interaction Capabilities**

**and Church Response**

It is assumed in the analytical framework that characteristics of pre-disaster member participation and interaction
of a congregation also play an important role in determining the demand-capability balance. In order to measure the interpersonal component of religious organizations a number of church participation measures are used as well as measures of residential clustering and class homogeneity. It is expected that churches with higher levels of pre-disaster participation, residential clustering, and class homogeneity are more likely to be involved in disaster recovery activities.

Beginning with residential clustering, Nelson's (1971) characterization of the communal church as providing the center of social as well as religious life presents a picture of a church congregation with a strong interpersonal unity which helps it in accomplishing its goals. The same should also be true of its disaster activities. However, Table 11 shows that there is no significant association between residential clustering and disaster response.

The same conclusion is true for class homogeneity. Congregations whose members tend to come from a similar class background are not significantly more involved in disaster response. In fact, for both residential clustering and class homogeneity the largest correlations are negative giving an indication that diversity may be more important than a similar residential or class background for the development of church disaster responses. Regardless, none of the findings for these two variables are significant.

The next group of variables involves some form of member participation in the church. Again it is expected that pre-disaster participation in church activities will carry over into the disaster period resulting in an active disaster response.

Total Sunday worship service attendance is the most common indicator of church participation. Looking at Table 11 it can be seen that Sunday worship attendance tends to be positively associated with disaster response, and is significantly associated with emergency community response (r= .32). However, to make Sunday worship attendance reflect more the commitment of the individual congregation members it is necessary to control for the size of the congregation. A second measure, percent of congregation attending Sunday worship, is also presented in the table and shows a significant negative association with disaster response. Church disaster response appears to be, not a result of a strong commitment by a large proportion of the members, but rather the simple size of the congregation. It is not necessary that everyone be a committed member. What is needed is a sufficiently large number of committed workers to carry on the activities regardless of the proportion of the entire congregation these members represent.
Table 11. Correlations Between Member Participation and Interaction and Disaster Response

<table>
<thead>
<tr>
<th>Variable</th>
<th>Type of Disaster Response</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Emergency Community Response</td>
<td>Long-Term Community Response</td>
<td>Emergency Member Response</td>
<td>Long-Term Member Response</td>
</tr>
<tr>
<td>Clustering of Member Residences</td>
<td>( r = .03 )</td>
<td>( -.12 )</td>
<td>( .05 )</td>
<td>( -.12 )</td>
</tr>
<tr>
<td></td>
<td>( N = 75 )</td>
<td>( 75 )</td>
<td>( 75 )</td>
<td>( 75 )</td>
</tr>
<tr>
<td>Class Homogeneity of Members</td>
<td>( r = -.14 )</td>
<td>( .02 )</td>
<td>( -.07 )</td>
<td>( -.13 )</td>
</tr>
<tr>
<td></td>
<td>( N = 78 )</td>
<td>( 78 )</td>
<td>( 78 )</td>
<td>( 78 )</td>
</tr>
<tr>
<td>Total Sunday Worship Attendance</td>
<td>( r = .32** )</td>
<td>( .17 )</td>
<td>( .17 )</td>
<td>( .04 )</td>
</tr>
<tr>
<td></td>
<td>( N = 74 )</td>
<td>( 74 )</td>
<td>( 74 )</td>
<td>( 74 )</td>
</tr>
<tr>
<td>Percent Sunday Worship Attendance</td>
<td>( r = -.33** )</td>
<td>( -.34** )</td>
<td>( .10 )</td>
<td>( .02 )</td>
</tr>
<tr>
<td></td>
<td>( N = 70 )</td>
<td>( 70 )</td>
<td>( 70 )</td>
<td>( 70 )</td>
</tr>
<tr>
<td>Total Sunday School Attendance</td>
<td>( r = .29** )</td>
<td>( .07 )</td>
<td>( -.03 )</td>
<td>( .00 )</td>
</tr>
<tr>
<td></td>
<td>( N = 72 )</td>
<td>( 72 )</td>
<td>( 72 )</td>
<td>( 72 )</td>
</tr>
<tr>
<td>Men's Organization Membership</td>
<td>( r = .19 )</td>
<td>( .19 )</td>
<td>( .15 )</td>
<td>( .03 )</td>
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<tr>
<td></td>
<td>( N = 72 )</td>
<td>( 72 )</td>
<td>( 72 )</td>
<td>( 72 )</td>
</tr>
<tr>
<td>Women's Organization Membership</td>
<td>( r = .30** )</td>
<td>( .42*** )</td>
<td>( .13 )</td>
<td>( .13 )</td>
</tr>
<tr>
<td></td>
<td>( N = 72 )</td>
<td>( 72 )</td>
<td>( 72 )</td>
<td>( 72 )</td>
</tr>
<tr>
<td>Youth Organization Membership</td>
<td>( r = .32** )</td>
<td>( .18 )</td>
<td>( .05 )</td>
<td>( -.01 )</td>
</tr>
<tr>
<td></td>
<td>( N = 73 )</td>
<td>( 73 )</td>
<td>( 73 )</td>
<td>( 73 )</td>
</tr>
<tr>
<td>Number of Newsletters per Month</td>
<td>( r = .01 )</td>
<td>( .10 )</td>
<td>( .17 )</td>
<td>( .05 )</td>
</tr>
<tr>
<td></td>
<td>( N = 74 )</td>
<td>( 74 )</td>
<td>( 74 )</td>
<td>( 74 )</td>
</tr>
<tr>
<td>Number of Social Occasions per Month</td>
<td>( r = .11 )</td>
<td>( .31** )</td>
<td>( .17 )</td>
<td>( -.05 )</td>
</tr>
<tr>
<td></td>
<td>( N = 71 )</td>
<td>( 71 )</td>
<td>( 71 )</td>
<td>( 71 )</td>
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<tr>
<td>Number of Weekly Worship Services</td>
<td>( r = .05 )</td>
<td>( .05 )</td>
<td>( .09 )</td>
<td>( .09 )</td>
</tr>
<tr>
<td></td>
<td>( N = 74 )</td>
<td>( 74 )</td>
<td>( 74 )</td>
<td>( 74 )</td>
</tr>
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</table>

\*p < .05
\**p < .01
\***p < .001
For the remaining measures of participation it is impossible to calculate a percentage of the total congregation since pastors were not asked to indicate the age and sex breakdown of their members. However, it is logical to assume that much of the association between these measures and disaster response is also due to sheer numbers and not to participation by a large percentage of the members.

The findings for these measures of participation show that emergency community response and long-term community response are significantly associated with men's organization membership \((r=.19 \text{ and } .19)\) and women's organization membership \((r=.30 \text{ and } .42)\). Both Sunday School attendance (predominantly youth oriented) and youth organization membership are significantly associated with emergency community response \((r=.29 \text{ and } .32)\). It appears that the youth, or the youthful character of the families in general, is more likely to be associated with the emergency response and not with the long-term response to any significant degree. In general, measures of pre-disaster attendance at church activities are associated with congregational disaster response, especially with community disaster response. In addition, congregation size appears also to be related, making a clear interpretation of the findings more difficult at this point.

The number of newsletters per month is expected to measure an aspect of communication within the congregational body as a unit. The usefulness of this measure in understanding disaster response is insignificant. There is a slight tendency for congregations developing a stronger response for members only to have more newsletters, but the finding is insignificant.

The number of social occasions each month is intended to measure, not some interaction potential, but the actual frequency of institutionalized social "get-togethers." The frequency of these social occasions is significantly associated with long-term community disaster response. Congregations which frequently meet together socially are more likely to develop long-term community disaster response activities. It is interesting to note the lack of association with a long-term member response.

Finally, the number of worship services shows no significant relationship with any type of disaster response. This is probably the result of the number of weekly worship services representing only spiritual ritual and its being confounded by theology and size. More conservative churches may have several different services during the week while larger congregations may hold the same service several times during the week.
In summary, member participation and interaction measures show some association with disaster response activities. This is especially true of participation in church programs and social activities. The association between participation measures and disaster response appears to be more a function of size rather than member commitment with the percent of members attending Sunday worship showing a moderate negative association with community disaster response. Residential clustering and class homogeneity show no association with disaster activities. It is also necessary to note that there are no significant associations between any of these measures of member participation and interaction and member response. Even the percent Sunday worship variable, which is positively related to having a conservative, inner-directed theology \( (r=.42) \), is unrelated to member only response. Apparently these measures of member participation and interaction have little or nothing to do with disaster response for members only.

**Resources and Church Response**

The final element of organizational capabilities is "physical resources currently being used or known to be available for use by organizational personnel and ideas about the proper usage of these resources" (Haas and Drabek, 1973:116). The physical resources considered include resources held by the congregation, the pastor as a resource, congregation members as resources, and resources controlled by the larger denominational body. Churches also received aid from a variety of outside sources and these are also considered.

**Congregational Resources**

Church congregations normally have under their control a variety of material resources which are "disaster relevant." These include money, members, staff, and buildings. It is expected that those congregations with more of these resources will be more likely to develop an active disaster response. The data testing these hypotheses are presented in Table 12.

A congregation's budget is a large and somewhat flexible resource which it could use for disaster recovery. It also requires little current expenditure of energy, although the money may have to be replaced at another time. Looking at the relationship between total budget and disaster response it can be seen that there is a significant positive relation with both emergency \( (r=.32) \) and long-term \( (r=.21) \) community response. It may be that the association with the emergency community response is higher
than that with the long-term community response since disaster response during the first week is more highly dependent on the resources immediately available to the congregation. Long-term response is typically supported by other outside sources as well.

It is again useful to look at the effect of size on the relationship between budget and disaster response. By computing the budget per member it is possible to separate the level of giving per member from the sheer dollar amount budgeted. As before, it is the size of the local budget, not the level of giving which appears to be associated with disaster response. The level of giving per member is actually negatively associated with community response. The association with a one year budget increase is also negatively associated with disaster response. This again suggests that it is not a high level of growth which is associated with disaster response, but simply the size of the budget.

The associations between size and disaster response are presented in Table 12 using both the number of members and the number of households as measures of congregation. As can be seen, both measures of size are associated with disaster response. It is also interesting to note the negative, but insignificant, associations between size and response for members only. While the association with size is not the strongest that has been found, it appears that congregational size is an important variable to consider. The associations between disaster response and a five year membership growth trend are also presented in Table 12, but they are all insignificant.

The number of staff is also a possible resource in the development of a disaster response. Congregations ranged from zero to three ministers being employed, although most only had one. The association between the number of staff and both types of community response is significant and in a positive direction. In addition, although it is insignificant, it is interesting to note the negative correlation between the number of staff and emergency response for members only. It appears that the pastor is quite important in the emergency period and that the fewer pastors there are the more likely the response will be for members only.

The four final variables represent the physical building structures available to the congregation. Serving as a shelter, serving food, providing office space for emergency organizations, and many other disaster activities all require a minimum amount of physical structures. It is likely that most of these structures all tend to exist together although there are many small churches in Xenia which may not have some of these resources, and several churches that do not own any buildings. Looking at
Table 12. Correlations Between Congregational Resources and Disaster Response

<table>
<thead>
<tr>
<th>Variable</th>
<th>Type of Disaster Response</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Emergency Community</td>
<td>Long-Term Community</td>
<td>Emergency Member Response</td>
<td>Long-Term Member Response</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Response</td>
<td>Response</td>
<td>Response</td>
<td>Response</td>
<td>Response</td>
</tr>
<tr>
<td>Congregational Budget</td>
<td>r= .32**</td>
<td>.21</td>
<td>-.06</td>
<td>-.06</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N= 59</td>
<td>59</td>
<td>59</td>
<td>59</td>
<td></td>
</tr>
<tr>
<td>Congregational Budget Per Member</td>
<td>r= -.33**</td>
<td>-.31**</td>
<td>.06</td>
<td>.01</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N= 59</td>
<td>56</td>
<td>56</td>
<td>56</td>
<td></td>
</tr>
<tr>
<td>Budget Increase</td>
<td>r= -.26*</td>
<td>-.19</td>
<td>.04</td>
<td>-.22*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N= 57</td>
<td>57</td>
<td>57</td>
<td>57</td>
<td></td>
</tr>
<tr>
<td>Membership Size</td>
<td>r= .27*</td>
<td>.18</td>
<td>-.04</td>
<td>-.08</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N= 72</td>
<td>72</td>
<td>72</td>
<td>72</td>
<td></td>
</tr>
<tr>
<td>5 Year Membership Growth Trend</td>
<td>r= -.02</td>
<td>-.04</td>
<td>.10</td>
<td>.09</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N= 75</td>
<td>75</td>
<td>75</td>
<td>75</td>
<td></td>
</tr>
<tr>
<td>Number of Households</td>
<td>r= .26*</td>
<td>.27*</td>
<td>-.05</td>
<td>-.06</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N= 71</td>
<td>71</td>
<td>71</td>
<td>71</td>
<td></td>
</tr>
<tr>
<td>Number of Ministerial Staff</td>
<td>r= .38***</td>
<td>.22*</td>
<td>-.17</td>
<td>-.06</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N= 80</td>
<td>79</td>
<td>80</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>Having a Kitchen</td>
<td>r= .48***</td>
<td>.37***</td>
<td>.02</td>
<td>-.02</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N= 77</td>
<td>77</td>
<td>77</td>
<td>77</td>
<td></td>
</tr>
<tr>
<td>Having a Sanctuary</td>
<td>r= .32**</td>
<td>.19*</td>
<td>-.04</td>
<td>-.19*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N= 77</td>
<td>77</td>
<td>77</td>
<td>77</td>
<td></td>
</tr>
<tr>
<td>Having Large Rooms</td>
<td>r= .41***</td>
<td>.30**</td>
<td>-.02</td>
<td>-.16</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N= 77</td>
<td>77</td>
<td>77</td>
<td>77</td>
<td></td>
</tr>
<tr>
<td>Having Small Rooms</td>
<td>r= .08</td>
<td>.01</td>
<td>.06</td>
<td>-.15</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N= 77</td>
<td>77</td>
<td>77</td>
<td>77</td>
<td></td>
</tr>
</tbody>
</table>

*p < .05  
**p < .01  
***p < .001
Table 12 it can be seen that having a kitchen, sanctuary, and large rooms are all positively related to both types of community disaster response. Possessing small rooms is not related to disaster response. It is also significant to see the shift from positive to negative associations when switching from community response to member response. This trend appears to be found for most of the resource variables considered here. The data indicate that possessing disaster relevant resources is positively associated with a community disaster response; lack of such resources results in no response at all or a response for members only.

Pastor as Resource

While it is easy to conceive of money and buildings as resources, it is also possible to focus on the individual who plays the role as pastor as a resource in developing a congregational disaster response. The three pastoral characteristics focused on here are age, education, and length of time at their Xenia congregation. The findings are presented in Table 13.

Pastor's age is hypothesized to have a negative association with disaster response since younger pastors have more physical stamina with which to respond to disaster demands. The findings, although insignificant, suggest a positive association possibly accounted for by experience gained during one's earlier years as pastor. It is also suggested in the literature that older pastors are more involved in pastoral (counseling) rather than physical disaster recovery activities. This association, tested using both correlational analysis and scattergram analysis, is found to be insignificant \( r = .05 \) and shows a generally low level of involvement in counseling activities by all pastors regardless of age. Pastor's age generally shows little association with any type of church disaster response.

A positive association is hypothesized between the number of years of college completed by a pastor and disaster response since skills gained during one's education may be useful in the organization of a disaster response. The findings show a significant association with emergency community response. It appears that the skills gained as a result of one's education may be more applicable to the long-term response than to the emergency response.

Finally, the length of time a pastor has been at the present Xenia congregation is expected to be positively associated with a strong disaster response. The longer period of tenure
Table 13. Correlations Between the Pastor as Resource and Disaster Response

<table>
<thead>
<tr>
<th>Variable</th>
<th>Type of Disaster Response</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Emergency Community Response</td>
<td>Long-Term Community Response</td>
<td>Emergency Member Response</td>
<td>Long-Term Member Response</td>
<td></td>
</tr>
<tr>
<td>Pastor's Age</td>
<td>r= .14</td>
<td>.11</td>
<td>-.05</td>
<td>-.05</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N= 73</td>
<td>73</td>
<td>73</td>
<td>73</td>
<td></td>
</tr>
<tr>
<td>Pastor's Education</td>
<td>r= .14</td>
<td></td>
<td>-.04</td>
<td>-.01</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N= 71</td>
<td>71</td>
<td>71</td>
<td>71</td>
<td></td>
</tr>
<tr>
<td>Length of Time at Present Congregation</td>
<td>r= .22*</td>
<td>.20*</td>
<td>-.09</td>
<td>-.04</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N= 70</td>
<td>70</td>
<td>70</td>
<td>70</td>
<td></td>
</tr>
</tbody>
</table>

*p < .05
allows one to establish greater levels of rapport with one's congregation and with the community in general. The findings support this with significant associations for both emergency community response ($r=.22$) and long-term community response ($r=.20$). It has been suggested by some authors that "excessively long" periods of tenure are also detrimental, indicating that the association between tenure and disaster response should be curvilinear. Scattergram analysis of this relationship indicated no strong curvilinear relationship. The results indicate that congregations with more stability in the role of pastor tend to be more involved in community disaster response.

In summary greater age, education, and length of tenure for pastors tend to have positive associations with community disaster response. The associations with member responses tend to be insignificant and negative.

**Congregation Members**

One of the most important resources held by a church is the members which can be utilized for a whole variety of disaster recovery activities. As the helping behavior and disaster literatures indicate it is not the lack of volunteers which plagues most communities struck by disaster but the lack of an organized means of utilizing them. Strong disaster response is expected to be associated with fewer very old and young members, more long time congregation members, and members with a higher socio-economic status. The findings for these variables are presented in Table 14.

Looking first at age, it can be seen that there is no association between the number of members over fifty or the number of members under sixteen and disaster response. There is a correlation of .19 between the number of members over fifty and disaster response for members only which indicates a tendency for older congregations to establish emergency member responses, but the findings are insignificant.

The number of members for ten or more years indicates, to some degree, the level of interpersonal establishment of members in the congregation and also in the community. Larger numbers of members for ten or more years should serve as a resource in the development of a community disaster response. As can be seen in Table 14, this variable is positively, but insignificantly, related to community disaster response. It might be expected that longer length of membership would encourage member responses, but these findings are also insignificant.
Table 14. Correlations Between Members as Resources and Disaster Response

<table>
<thead>
<tr>
<th>Variable</th>
<th>Type of Disaster Response</th>
<th>Type of Disaster Response</th>
<th>Type of Disaster Response</th>
<th>Type of Disaster Response</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Emergency Community</td>
<td>Long-Term Community</td>
<td>Emergency Member Response</td>
<td>Long-Term Member Response</td>
</tr>
<tr>
<td></td>
<td>Response</td>
<td>Response</td>
<td>Response</td>
<td>Response</td>
</tr>
<tr>
<td>Number of Members</td>
<td>r= .06</td>
<td>.10</td>
<td>.20</td>
<td>.00</td>
</tr>
<tr>
<td>Age 50 and Older</td>
<td>N= 68</td>
<td>68</td>
<td>68</td>
<td>68</td>
</tr>
<tr>
<td>Number of Members 16</td>
<td>r= .13</td>
<td>.00</td>
<td>-.14</td>
<td>-.06</td>
</tr>
<tr>
<td>and Younger</td>
<td>N= 67</td>
<td>67</td>
<td>67</td>
<td>67</td>
</tr>
<tr>
<td>Number of Members 10</td>
<td>r= .19</td>
<td>.11</td>
<td>-.10</td>
<td>.07</td>
</tr>
<tr>
<td>Years or More</td>
<td>N= 64</td>
<td>64</td>
<td>64</td>
<td>64</td>
</tr>
<tr>
<td>Number of College</td>
<td>r= .07</td>
<td>.11</td>
<td>.19</td>
<td>-.02</td>
</tr>
<tr>
<td>Graduates</td>
<td>N= 66</td>
<td>66</td>
<td>66</td>
<td>66</td>
</tr>
<tr>
<td>Number of Factory Workers</td>
<td>r= .07</td>
<td>.04</td>
<td>.20</td>
<td>.24*</td>
</tr>
<tr>
<td>N= 68</td>
<td></td>
<td>68</td>
<td>68</td>
<td>68</td>
</tr>
<tr>
<td>Number of Community</td>
<td>r= .08</td>
<td>.18</td>
<td>.15</td>
<td>-.13</td>
</tr>
<tr>
<td>Leaders</td>
<td>N= 66</td>
<td>66</td>
<td>66</td>
<td>66</td>
</tr>
<tr>
<td>Number of Well-to-do</td>
<td>r= -.08</td>
<td>.17</td>
<td>.15</td>
<td>-.16</td>
</tr>
<tr>
<td>Members</td>
<td>N= 65</td>
<td>65</td>
<td>65</td>
<td>65</td>
</tr>
<tr>
<td>Composite SES</td>
<td>r= .02</td>
<td>.18</td>
<td>.18</td>
<td>-.20</td>
</tr>
<tr>
<td>Indicator</td>
<td>N= 63</td>
<td>63</td>
<td>63</td>
<td>63</td>
</tr>
</tbody>
</table>

*p < .05
Social status has been found by several authors to be positively associated with participation in different types of associations. It is expected that the higher the social status of the congregation members the more likely the congregation will be active in disaster response. The number of college graduates, factory workers, community leaders, and well-to-do people are all used as indicators of socio-economic status. Findings are presented for each variable separately and for the composite index.

Looking first at the four individual indicators it can be seen that there are no strong consistent trends and few insignificant associations. For example, the number of college graduates in a congregation is most strongly associated with emergency member response (r=.19) and shows almost no association with any other type of response. The number of factory workers is significantly associated with long-term member response (r=.24) and shows an association with emergency member response (r=.20) indicating that individuals from lower socio-economic status levels are involved in disaster response but the response tends to be more member centered rather than community centered. Both the number of community leaders and well-to-do members in a congregation show a tendency toward being associated with a member emergency response followed by a community centered long-term response. The negative associations with a long-term member response tend to support this interpretation but the associations with emergency community response are much smaller and inconsistent. The composite SES indicator also supports, although insignificantly, the finding that congregations with members from higher SES levels tend to organize member only emergency responses followed by long-term responses for the community in general. However, as a whole, member characteristics do not appear to be very strongly associated with disaster response.

Denominational Resources

Churches that belong to denominational organizations frequently receive large amounts of disaster aid from their denomination. It is expected that certain characteristics of the denomination can be seen as disaster relevant resources available to the local congregation and linked to congregational disaster response. The more any denomination has of any one of these resources (churches, members, money, or clergy) the more it is able to supply local congregations with these resources to increase their disaster response. The findings for these variables are presented in Table 15.
Table 15. Correlations Between Denominational Resources and Disaster Response

<table>
<thead>
<tr>
<th>Variable</th>
<th>Type of Disaster Response</th>
<th>Emergency Community Response</th>
<th>Long-Term Community Response</th>
<th>Emergency Member Response</th>
<th>Long-Term Member Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Denomination Churches</td>
<td>r= .26*</td>
<td>.18</td>
<td>-.27*</td>
<td>-.15</td>
<td></td>
</tr>
<tr>
<td>N= 54</td>
<td></td>
<td>54</td>
<td>54</td>
<td>54</td>
<td></td>
</tr>
<tr>
<td>5 Year Increase in Number of Churches</td>
<td>r= -.22</td>
<td>-.18</td>
<td>.37**</td>
<td>.32*</td>
<td></td>
</tr>
<tr>
<td>N= 42</td>
<td></td>
<td>42</td>
<td>42</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>Number of Denominational Members</td>
<td>r= .00</td>
<td>.04</td>
<td>-.14</td>
<td>-.04</td>
<td></td>
</tr>
<tr>
<td>N= 54</td>
<td></td>
<td>54</td>
<td>54</td>
<td>54</td>
<td></td>
</tr>
<tr>
<td>5 Year Increase in Membership</td>
<td>r= -.22</td>
<td>-.18</td>
<td>.33*</td>
<td>.23</td>
<td></td>
</tr>
<tr>
<td>N= 42</td>
<td></td>
<td>42</td>
<td>42</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>Denominational Budget</td>
<td>r= .31*</td>
<td>.22</td>
<td>-.26*</td>
<td>-.20</td>
<td></td>
</tr>
<tr>
<td>N= 38</td>
<td></td>
<td>38</td>
<td>38</td>
<td>38</td>
<td></td>
</tr>
<tr>
<td>5 Year Increase in Budget</td>
<td>r= -.10</td>
<td>-.27</td>
<td>.15</td>
<td>-.10</td>
<td></td>
</tr>
<tr>
<td>N= 32</td>
<td></td>
<td>32</td>
<td>32</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>Number of Denominational Clergy</td>
<td>r= .13</td>
<td>.16</td>
<td>-.21</td>
<td>-.10</td>
<td></td>
</tr>
<tr>
<td>N= 53</td>
<td></td>
<td>53</td>
<td>53</td>
<td>53</td>
<td></td>
</tr>
<tr>
<td>Having Denominational Disaster Unit</td>
<td>r= .01</td>
<td>.25*</td>
<td>.03</td>
<td>.18</td>
<td></td>
</tr>
<tr>
<td>N= 76</td>
<td></td>
<td>76</td>
<td>76</td>
<td>76</td>
<td></td>
</tr>
</tbody>
</table>

*p < .05

**p < .01
To begin, looking at Table 15 it can be seen that churches belonging to denominations with larger numbers of churches are more likely to develop community oriented responses. Churches belonging to denominations with smaller numbers of churches are more likely to develop disaster responses organized for members only. Investigating whether a five year increase in the number of churches is also associated with disaster response, the opposite relationship is found. Churches belonging to denominations with growing numbers of churches are less involved in a community response and more involved in a member response. This is inconsistent with the findings at the congregational level where it appears that sheer size, which is associated with liberal denominations, is related to a community response. Growth, associated with a more conservative theology, is related to a member response.

The same pattern continues with other measures of denominational resources. The number of denominational members is only weakly related to disaster response, but growth in membership is negatively associated with community response and positively associated with member response. The size of the denominational budget is positively associated with community disaster response and negatively associated with member response. In contrast, a five year growth in the denominational budget is negatively associated with community response and has a low level, mixed association with member response. Budgets are unique in one sense since even denominations with sharply declining membership roles are able to show an increase in their budget. Finally, the number of denominational clergy shows a weak positive association with community response and a weak negative association with member response. In summary, churches which belong to denominations with larger amounts of money, members, churches, and clergy are more likely to organize a strong community disaster response and less likely to organize a response for their members only. Churches whose denominations are growing show the opposite trend with an increased likelihood of a member response and less involvement in community response.

Finally, the effect of the existence of a denominational disaster unit before the disaster is investigated. Looking at Table 15, it can be seen that the results support the hypothesis. The existence of a denominational disaster unit is positively associated with both types of long-term response ($r=.25$ and $.18$). The responses are stronger regardless of the inner or outer directness of the program, indicating that the existence of a denominational disaster unit is important regardless of community orientation. Emergency responses (carried on during the first week) are not associated with having a disaster unit indicating that it is difficult to set up a denominational response in such a short time.
In summary, variations in denominational resources and orientations regarding how resources are to be used are associated with the response of individual church congregations to disaster. Again it appears that it is large size, not growth, which is associated with community response. Churches belonging to denominations which are growing tend to respond more often to the needs of members only. Levels of benevolence giving and having a denominational disaster unit all tend to be positively associated with community disaster response. Of frequent interest is the number of times a variable which is positively associated with community response is negatively associated with member response. It appears that if a denomination has larger amounts of resources the church congregations are more likely to help the community in general. If it does not have the resources, the individual churches tend to organize disaster response for members only.

Evaluation of Outside Aid

The discussion of the importance of outside aid for disaster response up to this point has been removed from the actual receipt of resources from the outside and their importance for church response. Churches were also asked if their congregation received any outside aid following the disaster (see Question 13 in Appendix A). The responses to this question indicate that receiving outside aid is associated with emergency community response ($r=.41$), long-term community response ($r=.40$), emergency member response ($r=.16$), and long-term member response ($r=.23$). The receipt of outside aid has a marked association with most types of disaster response, especially a community response.

It is also possible to correlate the importance of aid received from specific sources and disaster activities. Churches were asked to rank the importance of outside sources of aid for their disaster recovery activities.$^1$ The associations between the importance of these various sources of disaster aid and church disaster response are presented in Table 16.

Investigating the table it can be seen that the importance of aid received from the national denominational organization, although insignificant only for the long-term member response, tends to be positively associated with both types of long-term disaster response. Long-term responses of any type require large amounts of resources for the restoration of people's lives and property to what they were before the disaster. Resources supplied by the national denominational organization appear to play a major role in long-term recovery efforts. The role of resources
Table 16. Correlations Between Importance of Sources of Aid and Disaster Response

<table>
<thead>
<tr>
<th>Source of Aid</th>
<th>Type of Disaster Response</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Emergency Community Response</td>
<td>Long-Term Community Response</td>
<td>Emergency Member Response</td>
<td>Long-Term Member Response</td>
<td></td>
</tr>
<tr>
<td>National Denominational Organization</td>
<td>r= .08</td>
<td>.21</td>
<td>.08</td>
<td>.28*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N= 44</td>
<td>44</td>
<td>44</td>
<td>44</td>
<td></td>
</tr>
<tr>
<td>Regional Denominational Organization</td>
<td>r= .06</td>
<td>.15</td>
<td>.28*</td>
<td>.11</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N= 44</td>
<td>44</td>
<td>44</td>
<td>44</td>
<td></td>
</tr>
<tr>
<td>Other Churches of the Same Denomination</td>
<td>r= -.02</td>
<td>.12</td>
<td>.20</td>
<td>.21</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N= 44</td>
<td>44</td>
<td>44</td>
<td>44</td>
<td></td>
</tr>
<tr>
<td>Other Churches Outside Denomination</td>
<td>r= -.15</td>
<td>-.14</td>
<td>-.19</td>
<td>.05</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N= 44</td>
<td>44</td>
<td>44</td>
<td>44</td>
<td></td>
</tr>
<tr>
<td>Individuals (Non-members)</td>
<td>r= -.02</td>
<td>-.10</td>
<td>-.02</td>
<td>-.27*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N= 44</td>
<td>44</td>
<td>44</td>
<td>44</td>
<td></td>
</tr>
<tr>
<td>Community Groups</td>
<td>r= -.33*</td>
<td>-.16</td>
<td>-.06</td>
<td>-.09</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N= 44</td>
<td>44</td>
<td>44</td>
<td>44</td>
<td></td>
</tr>
<tr>
<td>Groups Outside the Community</td>
<td>r= -.10</td>
<td>-.19</td>
<td>-.16</td>
<td>.05</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N= 44</td>
<td>44</td>
<td>44</td>
<td>44</td>
<td></td>
</tr>
<tr>
<td>Xenia Area Inter-Faith Council</td>
<td>r= -.06</td>
<td>-.41**</td>
<td>-.29**</td>
<td>-.18</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N= 44</td>
<td>44</td>
<td>44</td>
<td>44</td>
<td></td>
</tr>
<tr>
<td>Metropolitan Churches United</td>
<td>r=</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N=</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .05
**p < .01
supplied by the national denominational organization in emergency response is very small and insignificant.

The importance of resources supplied by the regional denominational organization (diocese, synod, district, convention, etc.) appear to have a positive association with various types of disaster response. The large significant association is with emergency member response ($r=.28$). Churches receiving resources from their regional denominational organization tend to be more involved in emergency responses for their members. The importance of regional sources for emergency aid may be a result of the relative proximity of a regional organization and the possibility that much of the resources may be intended for members only. Overall, noting this one moderate association, the importance of aid received from the regional organization also shows a slight tendency to be positively associated with all types of disaster response.

Churches that rated aid received from other local churches of the same denomination as important tended to develop a response for members only. The relationship with long-term community response is also positive but insignificant. In general, aid from the national, regional, and local denominational levels tended to be positively associated with disaster response.

Looking at Table 16, it can be seen that the importance of aid from other churches outside your denomination, individuals, community groups, groups outside the community, the Xenia Area Inter-Faith Council, and Metropolitan Churches United of Dayton all tend to be negatively associated with any kind of disaster response. Although only a few of the associations are significant the trend clearly indicates that if a church rated the aid they received from any one of these more minor groups as important they had almost no disaster response. They were probably in great need for aid themselves and were in no position to organize a disaster response based on the smaller amounts of aid one receives from these non-denominational sources of aid.

Denominational resources have been shown to play a positive role in the development of disaster response. Not only have certain denominational resources been shown to be related with the disaster response of local churches, but the actual importance of such resources has been shown to also be associated with participation in disaster response. The receipt of resources from other, non-denominational sources is associated, not with a strong disaster response, but with lesser participation in disaster response.
To summarize, congregational, pastoral, member, and denominational resources were all tested to determine if they are associated with church disaster response. Congregational resources (i.e., budget, size, and structural features) are generally all positively associated with community disaster response. Controlling for size indicates that the sheer amount of resources (i.e., budget) is more important in determining disaster response than the amount of money for each member. The pastor’s education and length of time at the Xenia congregation are also associated with community disaster response. Social characteristics of the members generally have no effect on church disaster response. Finally, some denominational resources are also related to disaster response. Although there is no strong trend, it appears that larger amounts of denominational resources are associated with general community response; smaller amounts of denominational resources are associated with disaster response for members only.

Disaster Demands and Church Response

The final element of the analytical framework to be discussed is organizational demands. The framework assumes that organizations mobilize to meet demands with their capabilities. The preceding sections have investigated the capabilities of churches quite thoroughly to determine which are associated with church disaster response. However, demands are a necessary precondition for the initiation of any type of disaster response regardless of capabilities. These demands are directly a function of disaster impact on the community which resulted in the creation of tasks for the community's churches to perform. As previously discussed disaster impact may also seriously affect organizational capabilities by reducing personnel, material, and facilities, in addition to creating demands for the organization to meet. For those measures of demands on religious organizations for disaster aid which do not involve any loss in organizational capabilities church disaster response should be positively associated with the demands placed on the churches following the disaster. For those aspects of disaster impact which both create demands and limit capabilities the association with church disaster response should be curvilinear, reflecting both the increased demands and decreased capabilities, but the relationship is less predictable. Scattergrams of these relationships will be checked for curvilinear relationships. The data measuring the association between demands and disaster response are presented in Table 17.

The first measure of disaster demands is distance from the impact area. Close proximity of the church to the impact area increases the likelihood of damage to the church and church members,
Table 17. Correlations Between Disaster Demands and Disaster Response

<table>
<thead>
<tr>
<th>Variable</th>
<th>Type of Disaster Response</th>
<th>Emergency Community Response</th>
<th>Long-Term Community Response</th>
<th>Emergency Member Response</th>
<th>Long-Term Member Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance from Impact Area</td>
<td>r= -.40***</td>
<td>-.41***</td>
<td>-.20*</td>
<td>-.23*</td>
<td></td>
</tr>
<tr>
<td>Damage to Church (Dollar Loss)</td>
<td>N= 83</td>
<td>81</td>
<td>83</td>
<td>83</td>
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</tr>
<tr>
<td>Damage to Members...</td>
<td>N= 82</td>
<td>80</td>
<td>82</td>
<td>82</td>
<td></td>
</tr>
<tr>
<td>Number with Total Damage</td>
<td>r= .21*</td>
<td>.30**</td>
<td>.03</td>
<td>.14</td>
<td></td>
</tr>
<tr>
<td>Percent with Total Damage</td>
<td>N= 81</td>
<td>79</td>
<td>81</td>
<td>81</td>
<td></td>
</tr>
<tr>
<td>Number with Major Damage</td>
<td>r= .15</td>
<td>.31**</td>
<td>.05</td>
<td>.07</td>
<td></td>
</tr>
<tr>
<td>Percent with Major Damage</td>
<td>N= 81</td>
<td>79</td>
<td>81</td>
<td>81</td>
<td></td>
</tr>
<tr>
<td>Number with Minor Damage</td>
<td>r= .27**</td>
<td>.29**</td>
<td>.00</td>
<td>.09</td>
<td></td>
</tr>
<tr>
<td>Percent with Minor Damage</td>
<td>N= 81</td>
<td>79</td>
<td>81</td>
<td>81</td>
<td></td>
</tr>
<tr>
<td>Number with Injury</td>
<td>N= 80</td>
<td>78</td>
<td>80</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>Percent with Injury</td>
<td>N= 68</td>
<td>68</td>
<td>68</td>
<td>68</td>
<td></td>
</tr>
<tr>
<td>Number with Business Damage</td>
<td>r= -.06</td>
<td>.10</td>
<td>.05</td>
<td>-.03</td>
<td></td>
</tr>
<tr>
<td>Percent with Business Damage</td>
<td>N= 81</td>
<td>79</td>
<td>81</td>
<td>81</td>
<td></td>
</tr>
<tr>
<td>Number with Short Work Stoppage</td>
<td>r= .04</td>
<td>.17</td>
<td>.02</td>
<td>.07</td>
<td></td>
</tr>
<tr>
<td>Percent with Short Work Stoppage</td>
<td>N= 81</td>
<td>81</td>
<td>81</td>
<td>81</td>
<td></td>
</tr>
<tr>
<td>Number with Long Work Stoppage</td>
<td>r= .25*</td>
<td>.43***</td>
<td>.15</td>
<td>.10</td>
<td></td>
</tr>
<tr>
<td>Percent with Long Work Stoppage</td>
<td>N= 81</td>
<td>79</td>
<td>81</td>
<td>81</td>
<td></td>
</tr>
</tbody>
</table>

*p < .05
**p < .01
***p < .001
increases the contact with disaster victims, and increases the usefulness of church facilities as shelters, feeding stations, office space, and collection points for volunteers and resources. The data found in Table 17 show that distance from impact area is significantly associated with all four types of disaster response. Distance from impact area is a major determinant of disaster response.

Another measure of disaster demands placed on church congregations is damage to the church buildings. Although only a minor portion of a strong disaster response is oriented toward repairing church facilities it remains part of the demands which face many congregations. The general associations found between church damage and disaster response are positive. The association is significant and strongest with the long-term community response. It is also interesting to see that church damage is not associated with long-term member response. It might have been expected that resources spent on church repair would have drained the resources available for general disaster activities forcing churches to take care of their members only. In contrast it appears that most churches that are hit by the disaster are also recipients of much outside aid. Since most church structures are substantially covered by insurance the outside aid can be used for a strong general community disaster response.

Damage to member families is another source of important disaster demands which may also affect church capabilities. Several questions involve member damage, injury, business damage, and loss of work. The data for each of these member demands is presented as the total number of families with each type of need and the percent of the total number of families in the congregation that these numbers represent.

Investigating first the association between the number of households with total damage and disaster response, the relationship is positive and significant for both types of community disaster response. The sheer number of households suffering total damage is important for the development of both types of community disaster response (r=.21 and .30). However, it is necessary to also look at the proportion of the whole that these numbers represent since ten households with total damage represent a more challenging demand for a small congregation than for a large congregation. It can be seen that as the number of households with total damage becomes a larger proportion of the total the response shifts from a community response to a member response. This finding is probably linked to a need for resources to meet extensive member needs and an inadequate reserve to develop a strong community response.
The association between members with major damage is also positive for all types of disaster response. The comparison between the numbers with major damage and the percentage of the total shows an increase in disaster response when the percentage of households with major damage is high. It may be that the need for a disaster response is high with a larger percentage of households with major damage but the drain on the capabilities is not sufficient to lower the ability to organize a strong community disaster response. It is interesting to note that the largest association is with long-term community response and not member response as is found with the percentage of households with total damage.

Looking at the associations between households with minor damage and disaster response it can be seen that the associations follow a pattern similar to that found in the association with major damage. Both types of community response are significantly associated with the number of households with minor damage. When considering the percentage of households with minor damage the association stays strong for only emergency community response. This set of findings tends to indicate that internal demands play a role in determining the type of community disaster response organized. Except for the situation where a large percentage of the households in a congregation suffer total damage, the resulting response is not simply directed toward congregation members but to the community in general. It would be interesting to find out actually what proportion of the aid given out by "community" responses is received by people outside the congregation.

Turning attention to households suffering injuries as a result of the tornado it can be seen that the actual number of these households shows no association with any type of disaster response. There is, however, a significant association between community emergency response and the percentage of households with injuries (r= .21). Injury is a problem closely associated with the emergency period and its impact is most strongly found during that period. Again it appears that damage to members determines somewhat the type of disaster program that is open to all members of the community.

Although one is often not in a place of business at the time of disaster and can generally continue to live a "normal" life if one's home is not damaged, damage to the source of one's income can have major long-term effects on a household. It is interesting to note that the percentage of households with business damage is significantly associated with long-term community response (r= .29). It is also significantly related to emergency member response. It may be that the higher percentages of households with business damage put a drain on church emergency
capabilities sufficient to limit the emergency response to members only, but this explanation requires further specification and support. The actual number of households suffering business damage is unrelated to disaster response.

Work stoppage also represents a significant drain on family resources and a significant demand for church response. Looking at Table 17 it can be seen that short work stoppage has no significant association with any type of disaster response. The number of households with long work stoppage is significantly associated with both emergency and long-term community response ($r=.25$ and $.43$). It may be that larger numbers of households with long work stoppage result in members relieved of their occupational demands which are free to participate in both emergency and long-term community disaster response. The fact that the work stoppage is long-term may also lead to these families becoming a major demand for the congregational disaster response as well.

For each variable a scattergram was created to test visually whether there is a curvilinear relationship between the type of church demand and the church disaster response. It is expected that churches with few demands would be less involved in church response, churches with moderate demands would be most in church response, and churches with many demands would again be less involved in church response. The scattergrams show no indication that churches with the largest levels of demands are less involved in disaster response. While there were no trends at all when the correlations are $.20$ and below, most visual indications are that churches with higher demands tend to be more involved in disaster response.

To summarize, the findings for church demands indicate that the distance a church is from the impact area, damage to the church building, and losses by congregation members all are positively associated with disaster response. In most cases all types of demands are associated with general community response. However, churches with the larger percentages of members with total damage tend to develop disaster response for members only. Contrary to the case of other types of demands which result in a community response, large percentages of members with total damage both indicate a large internal demand for aid and a loss of potential congregational resources. In general, demands for aid play an important role in the development of church disaster response.
Regression Analysis

To summarize the analysis up to this point, the findings have verified the expectation that church disaster response is related to the pre-disaster demand-capability balance and the impact of the disaster element on both demands and capabilities. The findings also indicate that the determination of church disaster activities is very complex. In looking for variables associated with disaster response, thirty-seven variables have associations with emergency community disaster response significant at the .05 level and have correlations of greater than .18. Forty-three variables have an association with long-term community response significant at the .05 level and have correlations greater than .17. Summary lists of these variables and their correlation coefficients are presented in Tables 18 and 19 for both types of community response. Further analysis of these data will be accomplished through the use of multiple regression analysis. The findings of the multiple regression analysis for both types of community response are presented in Tables 20 and 21.

Briefly looking at the regression analysis for variables predicting emergency community response it can be seen that the first variable selected is church membership in the Xenia Area Inter-Faith Council. As was stated earlier, membership in XAIFC represents a complex number of variables from ecumenical spirit to congregational resources. It appears that the constellation of factors associated with joining XAIFC is also important in understanding emergency community response.

Proceeding down the list, having a kitchen is probably highly related to emergency community response because of the usefulness of a kitchen during this period and its general correlation with other church building structures which are also valuable for sheltering victims and emergency activities. These resources appear again to play a major role in disaster response.

The positive influence of receiving aid from the outside is also a strong determinant of emergency community disaster response. It does not appear that any single source is important by itself, but the need for outside aid to develop an active emergency response is strong.

Finally, emergency community response appears not to be the result of single church units, but is linked with the combination of denominational churches to form a united disaster response.
Table 18. Variables with Strongest Association with Emergency Community Disaster Response

<table>
<thead>
<tr>
<th>Correlation</th>
<th>Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>.52</td>
<td>Member of Xenia Area Inter-Faith Council</td>
</tr>
<tr>
<td>.48</td>
<td>Having a kitchen</td>
</tr>
<tr>
<td>.44</td>
<td>Pastor's previous community involvement</td>
</tr>
<tr>
<td>.42</td>
<td>Encouragement by denomination to join XAIFC</td>
</tr>
<tr>
<td>.41</td>
<td>Having large rooms</td>
</tr>
<tr>
<td>.41</td>
<td>Receiving aid from outside sources</td>
</tr>
<tr>
<td>-.40</td>
<td>Distance from impact area</td>
</tr>
<tr>
<td>.38</td>
<td>Number of ministerial staff</td>
</tr>
<tr>
<td>.37</td>
<td>Combining of denominational churches for response</td>
</tr>
<tr>
<td>.36</td>
<td>Amount of denominational benevolence funds</td>
</tr>
<tr>
<td>.34</td>
<td>Congregation's previous community involvement</td>
</tr>
<tr>
<td>.33</td>
<td>Denominational complexity</td>
</tr>
<tr>
<td>-.33</td>
<td>Percent of members attending Sunday worship</td>
</tr>
<tr>
<td>-.33</td>
<td>Size of budget per member</td>
</tr>
<tr>
<td>.32</td>
<td>Denominational membership in National Council of Churches</td>
</tr>
<tr>
<td>.32</td>
<td>Number of members attending Sunday worship</td>
</tr>
<tr>
<td>.32</td>
<td>Membership in youth organizations</td>
</tr>
<tr>
<td>.32</td>
<td>Size of budget</td>
</tr>
<tr>
<td>.32</td>
<td>Having a sanctuary</td>
</tr>
<tr>
<td>.31</td>
<td>Size of denominational budget</td>
</tr>
<tr>
<td>.31</td>
<td>Percentage of members with major damage</td>
</tr>
<tr>
<td>.30</td>
<td>Membership in women's organizations</td>
</tr>
<tr>
<td>.29</td>
<td>Sunday school attendance</td>
</tr>
<tr>
<td>.27</td>
<td>Number of members</td>
</tr>
<tr>
<td>.27</td>
<td>Number of members with minor damage</td>
</tr>
<tr>
<td>.26</td>
<td>Percentage of members with minor damage</td>
</tr>
<tr>
<td>.26</td>
<td>Number of households in the congregation</td>
</tr>
<tr>
<td>-.26</td>
<td>Increase in church budget</td>
</tr>
<tr>
<td>.26</td>
<td>Number of denominational churches</td>
</tr>
<tr>
<td>.26</td>
<td>Number of denominational periodicals</td>
</tr>
<tr>
<td>.25</td>
<td>Number of members with long work stoppage</td>
</tr>
<tr>
<td>.23</td>
<td>Active church disaster role</td>
</tr>
<tr>
<td>.22</td>
<td>Pastor's length at Xenia congregation</td>
</tr>
<tr>
<td>.21</td>
<td>Percentage of members with injury</td>
</tr>
<tr>
<td>.21</td>
<td>Number of members with total damage</td>
</tr>
<tr>
<td>.19</td>
<td>Membership in men's organizations</td>
</tr>
<tr>
<td>.19</td>
<td>Importance of social role</td>
</tr>
</tbody>
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Table 19. Variables with Strongest Association with Long-Term Community Disaster Response

<table>
<thead>
<tr>
<th>Correlation</th>
<th>Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>.63</td>
<td>Member of Xenia Area Inter-Faith Council</td>
</tr>
<tr>
<td>.60</td>
<td>Encouragement by denomination to join XAIFC</td>
</tr>
<tr>
<td>.55</td>
<td>Congregation's previous community involvement</td>
</tr>
<tr>
<td>.44</td>
<td>Pastor's previous community involvement</td>
</tr>
<tr>
<td>.43</td>
<td>Number of members with long work stoppages</td>
</tr>
<tr>
<td>.42</td>
<td>Percentage of members with major damage</td>
</tr>
<tr>
<td>.42</td>
<td>Membership in women's organizations</td>
</tr>
<tr>
<td>-.41</td>
<td>Received aid from Metropolitan Churches United</td>
</tr>
<tr>
<td>-.41</td>
<td>Distance from impact area</td>
</tr>
<tr>
<td>.40</td>
<td>Receiving aid from outside sources</td>
</tr>
<tr>
<td>.39</td>
<td>Having a liberal theology</td>
</tr>
<tr>
<td>.37</td>
<td>Having a kitchen</td>
</tr>
<tr>
<td>.35</td>
<td>Combining of denominational churches for response</td>
</tr>
<tr>
<td>-.34</td>
<td>Percentage of Sunday worship attendance</td>
</tr>
<tr>
<td>.34</td>
<td>Denomination membership in National Council of Churches</td>
</tr>
<tr>
<td>-.31</td>
<td>Size of budget per member</td>
</tr>
<tr>
<td>.31</td>
<td>Number of members with major damage</td>
</tr>
<tr>
<td>.31</td>
<td>Number of social occasions per month</td>
</tr>
<tr>
<td>.30</td>
<td>Congregational benevolence giving</td>
</tr>
<tr>
<td>.30</td>
<td>Having large rooms</td>
</tr>
<tr>
<td>.30</td>
<td>Amount of church loss</td>
</tr>
<tr>
<td>.30</td>
<td>Number of members with total damage</td>
</tr>
<tr>
<td>.29</td>
<td>Percentage of members with business loss</td>
</tr>
<tr>
<td>.29</td>
<td>Number of members with minor damage</td>
</tr>
<tr>
<td>.27</td>
<td>Number of households in the congregation</td>
</tr>
<tr>
<td>.26</td>
<td>Pastor's education role</td>
</tr>
<tr>
<td>.26</td>
<td>Importance of social role</td>
</tr>
<tr>
<td>.25</td>
<td>Denominational complexity</td>
</tr>
<tr>
<td>.25</td>
<td>Having a denominational disaster unit</td>
</tr>
<tr>
<td>.22</td>
<td>Number of ministerial staff</td>
</tr>
<tr>
<td>.22</td>
<td>Having an episcopal authority structure</td>
</tr>
<tr>
<td>.21</td>
<td>Active church disaster role</td>
</tr>
<tr>
<td>-.21</td>
<td>Number of years since church founded</td>
</tr>
<tr>
<td>.21</td>
<td>Size of congregational budget</td>
</tr>
<tr>
<td>.20</td>
<td>Pastor's length at Xenia congregation</td>
</tr>
<tr>
<td>.20</td>
<td>Importance of social pastoral role</td>
</tr>
<tr>
<td>.19</td>
<td>Pastor's administrative role</td>
</tr>
<tr>
<td>.19</td>
<td>Membership in men's organizations</td>
</tr>
<tr>
<td>.19</td>
<td>Having a sanctuary</td>
</tr>
<tr>
<td>-.19</td>
<td>Increasing congregational budget</td>
</tr>
<tr>
<td>.18</td>
<td>Number of denominational churches</td>
</tr>
<tr>
<td>.18</td>
<td>Number of congregation members</td>
</tr>
</tbody>
</table>
### Table 20. Multiple Regression Analysis of Variables Predicting Emergency Church Response

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mult R</th>
<th>R²</th>
<th>Simple R</th>
<th>Beta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Member of XAIFC</td>
<td>.52</td>
<td>.27</td>
<td>.52</td>
<td>.29</td>
</tr>
<tr>
<td>Having a kitchen</td>
<td>.61</td>
<td>.37</td>
<td>.48</td>
<td>.28</td>
</tr>
<tr>
<td>Received aid from outside sources</td>
<td>.66</td>
<td>.44</td>
<td>.41</td>
<td>.30</td>
</tr>
<tr>
<td>Combining of denominational churches</td>
<td>.70</td>
<td>.49</td>
<td>.37</td>
<td>.23</td>
</tr>
</tbody>
</table>

Multiple R: .70  
R square: .49  
Standard error: 4.23

<table>
<thead>
<tr>
<th>Analysis of Variance</th>
<th>df</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F-ratio</th>
</tr>
</thead>
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<tr>
<td>Regression</td>
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<td>464.8</td>
<td>116.2</td>
<td>6.50</td>
</tr>
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<td>Residual</td>
<td>27</td>
<td>482.6</td>
<td>17.9</td>
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</tr>
</tbody>
</table>
Table 21. Multiple Regression Analysis of Variables Predicting Long-Term Church Response

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mult 9 Simple</th>
<th>2 Simple</th>
<th>Beta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Member of XAIFC</td>
<td>.63 .40 .63</td>
<td>.31</td>
<td></td>
</tr>
<tr>
<td>Amount of benevolences given</td>
<td>.68 .46 .30</td>
<td>.17</td>
<td></td>
</tr>
<tr>
<td>Percentage of members with major damage</td>
<td>.72 .51 .42</td>
<td>.16</td>
<td></td>
</tr>
<tr>
<td>Previous community involvement</td>
<td>.74 .54 .54</td>
<td>.25</td>
<td></td>
</tr>
<tr>
<td>Received aid from outside sources</td>
<td>.76 .58 .40</td>
<td>.24</td>
<td></td>
</tr>
<tr>
<td>Combining of denominational churches</td>
<td>.78 .61 .35</td>
<td>.18</td>
<td></td>
</tr>
</tbody>
</table>

Multiple R .78
R square .61
Standard error 5.99

Analysis of Variance

<table>
<thead>
<tr>
<th></th>
<th>df</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F-ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>6</td>
<td>2189.9</td>
<td>365.0</td>
<td>10.18</td>
</tr>
<tr>
<td>Residual</td>
<td>39</td>
<td>1398.8</td>
<td>35.9</td>
<td></td>
</tr>
</tbody>
</table>
In summary, the four discussed variables explain 49% of the variance in emergency community response. The analysis of variance for the equation indicates that the ratio of the regression to the residual sums of squares is significant beyond the .01 level. The variables selected by the analysis are all closely linked with the possession of resources. Both having a kitchen and receiving aid from outside sources are measuring the availability of material resources. Membership in the Xenia Area Inter-Faith Council and combining with other denominational churches both are related to the combining of individual church congregations to make all types of resources more readily available to all of the member congregations. All of these selected variables show strong and significant associations with emergency disaster response and these results appear not to be severely affected by the problems related to the small number of cases. Allowing the regression analysis process to continue by accepting less significant variables to be included in the equation it is found that membership in youth organizations and having a sanctuary are positively associated and distance from the impact area and the percentage of members attending Sunday worship are negatively associated with emergency disaster response. While this list indicates that resources continue to be important, it also introduces measures of demands and member participation.

The multiple regression analysis of variables predicting long-term community response indicates six variables which are of significant independent importance in understanding long-term church response. The first variable is again membership in the Xenia Area Inter-Faith Council. As with its explanation of emergency community response, membership in XAIFC indicates an ecumenical cooperative spirit, the possession of resources, etc. However, since the actions of XAIFC and the long-term responses of churches existed during the same long-term recovery period it is possible that one of these types of responses led to involvement in the other. It is difficult to make causal statements without more information. It is also interesting to note that while membership in XAIFC was the first variable selected with an initial beta of 0.63 its effect is reduced significantly after controlling for the effects of the seven other variables.

The amount of benevolence giving by the congregation is the second predictor selected. This variable appears to be related to a congregation's support for helping other people and would be expected to be associated with long-term disaster response. It was shown earlier that characteristics such as budget and benevolence giving are, instead, associated with size. Benevolence giving is strongly associated with the size of the budget ($r=0.57$), the number of members in the congregation ($r=0.41$), and the number of households in the congregation ($r=0.62$). In contrast,
benevolence giving shows little association with previous community involvement \((r=.22)\) or the pastor's previous community involvement \((r=.19)\). However, since size was not selected by the analysis as an important independent determinant of church disaster response it is assumed that the amount of benevolence giving reflects both the normative aspect and the element of size.

The third variable selected, the percentage of members with major damage, is a measure of the demands placed on the church. Although it is only one of several types of damage, most of the damage measures are related. Generally, this finding indicates that demands, as a result of member damage, are a significant independent predictor of long-term church disaster response.

A congregation's previous community involvement is also selected for inclusion in the regression equation. This variable is associated with the normative orientation toward the community and is clearly associated with a liberal theology \((r=.43)\), membership of denomination in the National Council of Churches \((r=.56)\), and membership in XAIFC \((r=.56)\). The community orientation of a church is important for the understanding of long-term disaster response.

Receiving aid from outside sources is the fifth variable selected for inclusion in the regression equation. This again emphasizes the importance of resources for a strong long-term community response program. Compared to the finding that some internal resources are important for the development of a strong emergency resource, it appears that the organization of an active long-term response is highly dependent on receiving resources from outside sources. This includes both denominational organizations using active churches as mechanisms to disperse their aid and smaller, independent organizations which apparently act as their own dispersing agent, giving their resources mainly to churches which need it to meet internal demands. Churches carrying on a long-term disaster response need many resources to maintain their activities. Many resources are supplied by these outside organizations.

Finally, combining with other churches of the same denomination to form a denominational disaster response is found to be associated with long-term disaster response. As with joining the Xenia Area Inter-Faith Council, this indicates that long-term disaster response is strengthened through the combination of churches as compared to attempting to develop an individual disaster response program. While the Xenia Area Inter-Faith Council is an ecumenical effort and the other is a denominational effort, both examples of combined programs are found to be related to long-term disaster response.
In summary, the image of a church with a strong emergency response is one which both joined the Xenia Area Inter-Faith Council and combined relief efforts with other churches in its denomination. In addition, it had certain church resources, such as a kitchen, which allowed it to provide emergency aid. It did not have to meet all the demands using its own resources since it also received assistance from outside sources. Less significant findings indicate that the church was located close to the impact area, had larger numbers of active youth members, and had lower percentages of active members.

The regression analysis also presents a clear summary of the major independent factors predicting long-term community disaster response. These factors create an image of a church with a varied long-term community disaster response as being a member of the XAIFC, having larger amounts of congregational benevolence funds, having a larger percentage of members with major damage, having a strong congregational involvement in the community, receiving aid from outside sources, and having combined with other churches of the same denomination to organize a denominational disaster effort. Disregarding the significance of the factors and allowing the regression analysis to continue results in the number of members suffering a long work stoppage, the number of families with total damage, and church theology being selected as variables to be included in the equation. Although these findings are only suggestive, they do further indicate the importance of member demands and the church's normative orientation for long-term church response.

One problem that appears in this analysis is the possible contamination due to the variable "being a member of the Xenia Area Inter-Faith Council." Being a member of the Council could mean that churches were involved in a wide variety of recovery activities for the community because the Xenia Area Inter-Faith Council was involved in them. The problem becomes apparent when it is noticed that membership in the Council is the first variable selected by the multiple regression analysis for both types of community disaster response. To control for this contamination regression analysis was run a second time for both types of disaster response while eliminating membership in the Council as an independent variable. The results of this analysis are presented in Tables 22 and 23.

Looking first at the results for emergency community response it can be seen that the first two variables in the previous analysis, having a kitchen and distance from the impact area, are still significant. The two new variables are the pastor's previous level of community involvement and the number of members attending Sunday worship. This finding indicates that pastoral
Table 22. Multiple Regression Analysis of Variables Predicting Emergency Church Response Excluding Membership in XAIFC

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mult $R^2$</th>
<th>Simple $R$</th>
<th>Beta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Having a kitchen</td>
<td>.48</td>
<td>.23</td>
<td>.48</td>
</tr>
<tr>
<td>Distance from impact area</td>
<td>.62</td>
<td>.39</td>
<td>-.40</td>
</tr>
<tr>
<td>Pastor's community involvement</td>
<td>.69</td>
<td>.48</td>
<td>.44</td>
</tr>
<tr>
<td>Number of members attending</td>
<td>.72</td>
<td>.52</td>
<td>.32</td>
</tr>
<tr>
<td>Sunday worship</td>
<td></td>
<td></td>
<td>.23</td>
</tr>
</tbody>
</table>

Multiple $R$ .72  
$R$ square .52  
Standard error 4.09

Analysis of Variance

<table>
<thead>
<tr>
<th></th>
<th>df</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F-ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>4</td>
<td>495.2</td>
<td>123.8</td>
<td>7.39</td>
</tr>
<tr>
<td>Residual</td>
<td>27</td>
<td>452.1</td>
<td>16.7</td>
<td></td>
</tr>
</tbody>
</table>
Table 23. Multiple Regression Analysis of Variables Predicting Long-Term Church Response Excluding Membership in XAIFC

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mult R</th>
<th>R²</th>
<th>Simple R</th>
<th>Beta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Previous community involvement</td>
<td>.54</td>
<td>.30</td>
<td>.54</td>
<td>.36</td>
</tr>
<tr>
<td>Distance from impact area</td>
<td>.68</td>
<td>.47</td>
<td>-.41</td>
<td>-.44</td>
</tr>
<tr>
<td>Percent Sunday worship attendance</td>
<td>.73</td>
<td>.54</td>
<td>-.34</td>
<td>-.23</td>
</tr>
<tr>
<td>Combining of denominational churches</td>
<td>.76</td>
<td>.58</td>
<td>.35</td>
<td>.20</td>
</tr>
<tr>
<td>Number of members with long work stoppage</td>
<td>.78</td>
<td>.61</td>
<td>.43</td>
<td>.19</td>
</tr>
</tbody>
</table>

Multiple R .78  
R square .61  
Standard error 5.93

<table>
<thead>
<tr>
<th>Analysis of Variance</th>
<th>df</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F-ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>5</td>
<td>2183.7</td>
<td>436.7</td>
<td>12.43</td>
</tr>
<tr>
<td>Residual</td>
<td>40</td>
<td>1405.0</td>
<td>35.1</td>
<td></td>
</tr>
</tbody>
</table>
leadership and size are both important characteristics for determining emergency community response. The pastor's leadership is important during the emergency period when few formal denominational disaster programs will have had time to emerge. The pastor appears to be a major moving force for church emergency disaster response. Size, as measured by the number of members attending Sunday worship, is also important because it indicates the immediate active resources available to the congregation. This again emphasizes the importance of local resources for the development of emergency disaster response.

Shifting attention to the reanalysis of long-term community response it can be seen in Table 23 that the congregation's previous community involvement, the combining of denominational churches for a unified response, and the number of members suffering a long work stoppage all remain important determinants. The two new factors are distance from the impact area and the percentage of members attending Sunday worship. It is not surprising that distance is an important determinant of both emergency and long-term community response since it is a major element for determining demands. The percentage of members attending Sunday worship is negatively associated with long-term community disaster response. Those churches that were more active in disaster activities are not those that emphasize and have high levels of participation in religious ritual. Although the correlations are not high, the percentage of members attending Sunday worship is also associated with having a conservative theology \((r=0.40)\), lower levels of community involvement by both the congregation \((r=-0.37)\) and the pastor \((r=-0.41)\), and is negatively associated with one's denomination belonging to the National Council of Churches \((r=-0.39)\).

In summary, eliminating membership in the Xenia Area Inter-Faith Council from the regression analysis because of its possible contaminating effects did allow several new variables to become important in the regression analysis. These newly selected variables had already been found to be associated with church disaster response. This reanalysis simply reinforces the importance of pastoral leadership, size, distance, and a general outer-directedness for understanding church disaster response.

To conclude, despite the problems associated with using regression analysis for this study, the analysis does present what appears to be an accurate picture of those factors most strongly associated with disaster response. It may be that the actual betas or selected factors would show variation with those computed using a larger sample, but the general picture of active churches compares very closely with the correlation analysis of the entire list of variables. It is felt that the regression analysis provides a good concise summary of the variables important in understanding both emergency and long-term community disaster response.
1. Pastors were asked to rank the aid they received from their national denominational organization, their regional denominational organization, other churches of the same denomination, other churches outside their denomination, individuals, community groups, groups outside the community, the Xenia Area Inter-Faith Council, and the Metropolitan Churches United. Responses are scored very important = 1 to unimportant = 4.
CHAPTER 6

SUMMARY AND CONCLUSIONS

Introduction

It was stated that the purpose of this study is to investigate what religious organizations do following a disaster and to determine what characteristics of the church congregation explain different levels of involvement in disaster recovery activities. Based on an exploratory study of church activities following the Wilkes Barre flood disaster and a review of relevant literature, an analytical model of organizational functioning was developed. This framework conceptualizes organizational functioning as the meeting of organizational demands using organizational capabilities. Under normal circumstances demands and capabilities are in balance, developing as a function of the preceding context and conditions of the immediate situation. Disaster impact is a severe condition under which organizations must function, affecting both the current conditions and the previous demand-capability context. After adapting the conceptual framework specifically to church response to disaster in Xenia, Ohio the data were collected and the findings presented. The purpose of this chapter is to summarize the findings and to present some general conclusions.

Studying a church using an organizational framework it was also expected that the findings of this study would indicate the usefulness of this approach for studying churches in other types of situations as well as provide findings generalizable to different types of organizations involved in community disaster response. An evaluation of the analytical framework will also be presented in this chapter.

Finally, it is also hoped that information gained in this study will provide an understanding regarding the role of churches following disasters. With this type of information it is more likely that churches will become more integrated into the overall community response, that local church response will be strengthened through the understanding of the important determining elements, and that the role of national and regional church organizations will be further understood. In this chapter all of these topics and their implications will be discussed.
Findings

It is an important finding of this study that churches are heavily involved in the recovery activities of communities hit by disaster. Churches are involved from the very beginning providing emergency aid such as shelter, food, clothing, money, counseling, labor, and physical space for the emergency recovery activities of other organizations. Churches are also active during the more extended recovery activities. Most churches provide food, clothing, counseling, money, volunteer labor, and many other types of aid suited to their specific community needs. This finding alone is significant since little attention has been given to the disaster activities of individual church congregations by disaster literature.

Utilizing the analytical framework and organizational characteristics suggested by the organizational literature, the disaster literature, the voluntary association literature, the helping behavior literature, and the religious organization literature, this study has shown many of these factors to be significantly associated with both emergency and long-term church response. Looking at Table 24, which classifies the characteristics which are significantly associated with disaster response by their analytical framework classification, it can be seen that in most cases at least half of the indicators selected for this study are significantly associated with a type of disaster response.

As a group, normative/structural characteristics show twenty-two of forty-eight relationships as significant. The normative/structural characteristics of the denomination, the church congregation, and the pastor all tend to maintain half of their characteristics being significantly associated with disaster response. However, more significant associations are found between normative/structural characteristics and long-term disaster response than between normative/structural characteristics and emergency response.

Member participation and interaction characteristics also show almost half, eight of twenty-two, of the associations as significant. The emergency response of a congregation tends to be slightly more associated with these characteristics than is the long-term response.

The resource component of the analytical framework does not show strong consistent relationships with disaster response using all four major sources of resources. Resources of the congregation as a unit show fifteen of twenty-two associations as significant. It is difficult to generalize from so few characteristics being tested, but it appears that the pastor is also an important
Table 24. Number of Significant Associations with Church Disaster Response by Component of Demand-Capability Model

<table>
<thead>
<tr>
<th>Demand-Capability Component</th>
<th>Type of Disaster Response</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Emergency Response</td>
</tr>
<tr>
<td>Normative Component</td>
<td></td>
</tr>
<tr>
<td>Denominational characteristics</td>
<td>4 of 8</td>
</tr>
<tr>
<td>Church characteristics</td>
<td>6 of 13</td>
</tr>
<tr>
<td>Pastor characteristics</td>
<td>1 of 3</td>
</tr>
<tr>
<td>Member Participation and Interaction</td>
<td>5 of 11</td>
</tr>
<tr>
<td>Resource Component</td>
<td></td>
</tr>
<tr>
<td>Congregational resources</td>
<td>9 of 11</td>
</tr>
<tr>
<td>Pastor as resource</td>
<td>1 of 3</td>
</tr>
<tr>
<td>Members as resources</td>
<td>0 of 8</td>
</tr>
<tr>
<td>Denominational resources</td>
<td>2 of 8</td>
</tr>
<tr>
<td>Organizational demands</td>
<td>7 of 16</td>
</tr>
</tbody>
</table>
determinant of church response. The members as a resource show no associations as significant. This finding is consistent with the many earlier indications that a committed membership is not necessary for a strong disaster response. For example, churches with the strongest disaster response have lower levels of member attendance and member giving. Whether all of the congregation members are active in church disaster response is not important. A strong congregational response simply requires that there are enough active members to handle the organization and distribution of church resources.

Denominational resources show few significant associations with disaster response. Emergency community response is significantly associated with three of sixteen factors, although there is no association between strength of disaster response and the importance of disaster aid received from the local, regional, or national denominational bodies. Long-term disaster response is only significantly associated with one denominational resource, although long-term response is positively associated with the importance of aid received from all three sources of denominational aid. This one significant association is with the presence of a denominational disaster unit. The existence of a denominational disaster unit may have a significant impact on all churches, including those receiving few denominational resources, by providing any assistance efficiently so as to make the local disaster responses more effective. Overall, the resource component of the analytical framework shows a meaningful association with church disaster response.

The final component of the analytical framework, organizational demands including the effects of the disaster, also shows significant association with church disaster response. Fifteen of the thirty-two associations between demands and disaster response are significant. This is true of both emergency and long-term disaster response. While it is difficult to separate the effects of disaster impact on church demands and capabilities, it is apparent that damage tends to be positively associated with community disaster response. The only exceptions are churches which had larger percentages of their member families suffering total damage. These churches are still involved, only with a member response, rather than a community response. The loss of capabilities (resources) appears not to have a strong effect on church disaster response.

In addition to this summary of those factors which are significantly associated with church disaster response, it is also important to point out those findings which are not expected or which appear opposite to the predictions of the model. First of all, the size of the congregation is discussed throughout Chapter 5
as being an underlying variable which explains disaster response. There are clear associations between the number of members (size) and budget \((r = .87)\), total attendance \((r = .80)\), and benevolence giving totals \((r = .41)\), but the importance of size and these other size related variables does not appear as significant in the regression analysis. Regression analysis indicates that size alone is not a major determinant of church response. This finding is probably a result of the way church response is measured. Church response in this study is a measure of the number of different activities that a church is involved in and not the amount of aid that is provided. Size is more likely related to the amount of aid provided and not the number of different types.

Another unexpected finding is that much of the disaster response carried on by churches is not organized by individual churches working alone. This supports Martin's (1976) findings regarding the importance of the denominational organization for church disaster response. In the case of Xenia churches, almost half of the denominations had organized combined programs for their churches. These programs are found to be more successful in providing a wider variety of disaster activities than are individual congregations. There are also national disaster units which are organized and funded by individual denominations. The most common of these are the Salvation Army, the Mennonite Disaster Relief, and the Seventh Day Adventists. Having some type of denominational disaster unit is also associated with long-term community disaster response. The National Council of Churches in Christ also has an ecumenical relief organization which provides disaster relief following disasters. All of these differing types of combined disaster response organizations have had a significant impact on congregational disaster activities and have resulted in active congregational disaster responses.

At the local level it appears that the emergence of ecumenical disaster relief organizations has been institutionalized. Since the emergence of the Wilkes Barre Flood Recovery Group in 1972 almost every community that DRC has studied, including Xenia, has developed some type of ecumenical disaster relief organization (see Ross, 1976). This institutionalization process has been facilitated by personnel from the Wilkes Barre and Xenia organizations traveling to communities hit by disaster and providing them with help in setting up their own program. These activities appear to be successful to some degree since belonging to the Xenia Area Inter-Faith Council is quite strongly associated with the individual congregation disaster response.

In summary, it appears that there are several means by which local church relief programs are supplemented by combining with other church bodies. The findings indicate that church
programs which are supplemented in this fashion are more likely to be effective in providing a wider variety of disaster recovery activities. This includes having a denominational disaster unit, combining with other churches of your denomination, combining with other churches of different denominations, or receiving aid from local, regional, or national denominational church organizations.

It is impossible to determine at this time how much autonomy the local congregation has regarding the organization and control of these combined programs or from where the specific resources for these programs are derived. For example, in Wilkes Barre, the location of one of the earlier and less organized ecumenical disaster organizations, informants indicated that there was considerable arguing going on over how much control over the organization denominational organizations were given for a certain amount of financial support. Obviously, with each individual supporting organization attempting to maintain some control over the combined disaster organization, it is very difficult for the organization to determine for itself what its activities will be. However, it is clear from this study that these combined programs are more successful in involving churches in a diverse disaster recovery program than are isolated churches. It is also apparent that these combined programs, their organization, their support, and the depth and breadth of their program need more study. As with many other aspects of disaster response it may be that planning and organization are keys to an effective disaster response.

Evaluation of the Framework

An overall summary of the findings utilizing the conceptual framework developed for this study is presented in Tables 18 and 19 listing those characteristics which are significantly associated with church disaster response, in Tables 20 and 21 showing the most important independent characteristics as determined by regression analysis, and in Table 24 showing the number of characteristics for each component of the framework which is significantly associated with church disaster response. However, while these tables present the overall findings of the study using the conceptual framework it is still necessary to evaluate the applicability or "success" of the model for explaining and understanding church disaster response.

To begin, the use of an open system perspective is a major strength of the framework. One important source of this strength is the focusing on exogenous as well as endogenous factors for the determination of organizational functioning. The disaster response of church congregations has been shown to be significantly associated with the internal normative/structural, member
participation and interaction, and resource components of each church. However, elements external to the individual church congregations are also shown as important. The Xenia Area Inter-Faith Council, local denominational churches, and the regional and national denominational organizations have all been shown to have a significant influence on the development of a church disaster response.

External elements have also been conceptualized as the recipients of church disaster aid. Many churches do make assistance available to people outside their congregation. Being conceptualized as external requests for assistance, making one's assistance activities available to the community in general, rather than to members only, is also shown to be related to many characteristics included in the analytical framework such as the amount of member damage, complexity, certain structural resources, denominational characteristics, etc. The conceptual framework handles this external response element of church disaster functioning as well as activities to meet internal demands. Overall, the broadening of the focus of this study beyond individual congregational units is an important part of gaining a complete picture of church disaster response.

The open system approach to organizational functioning also includes the characterization of systems (organizations) as adapting to changes in the environment. One of the major consequences of any disaster event is the creation of realistic tasks for community organizations to solve. In the development of a coordinated community disaster response many of these tasks are seen as part of the legitimate domain of existing community organizations. In a community such as Xenia after the impact of the tornado many of the tasks are handled by the local government, police, fire department, civil defense, Red Cross, National Guard, and other state and federal agencies. However, despite the activities of these agencies there are still new demands in the community for food, shelter, or material goods that are not met by these relief agencies. Spiritual and counseling needs, already viewed as part of the domain of community churches, were evidenced at much greater levels than before. The disaster also affected the capabilities of churches to respond to these demands by damaging church, staff, and member facilities. Churches, therefore, were faced with a changing environment which led to new and increased demands and decreased capabilities.

Focusing on disaster impact as a condition in the environment to which Xenia churches must adapt, it is shown by this study that the effects of disaster impact have a strong association with church disaster response. The distance from the church to the impact area, the amount of church damage, and the amount of member damage can all be understood as demands for church
assistance which are significantly associated with church disaster response. In addition, disaster impact can also affect disaster functioning through its effect on organizational capabilities. While it is possible that church disaster activities might be severely limited by such a loss of capabilities, except in the case where a large percentage of church members suffered total damage, church disaster response is increased by disaster demands. Therefore, it can be seen that this dynamic characterization of organizations adapting to their changing environment is important for a complete understanding of church functioning after a disaster or organizational functioning in any dynamic environment.

The model also has the strength that it emphasizes the continuity of the pre-disaster functioning and the post-disaster functioning of organizations. As has been shown in many studies (Quarantelli, 1966; Adams, 1969; Forrest, 1972; Dynes, Quarantelli, and Kreps, 1972), the changing or "new" environment is not the only determinant of organizational functioning after a disaster. The historical context out of which the current organizational functioning develops, the previous demand-capability balance, and pre-disaster levels of organizational functioning are all shown to be important in determining organizational response to disaster. Measures of the church's pre-disaster involvement in community activities, benevolence giving, the pastor's pre-disaster involvement in community activities, the importance of a social vs. spiritual role, and the norm of playing an active disaster role are all pre-disaster determinants of organizational functioning but also "carry over" to the post-disaster time period and are significantly associated with church disaster activities. This continuity of organizational functioning indicates that disaster functioning is not "unique," but is related to, and predictable from, pre-disaster characteristics.

This high degree of continuity between pre-disaster characteristics and post-disaster functioning indicates that it is possible to develop an organizational profile of pre-disaster characteristics which are strongly associated with the disaster response of religious organizations. This general profile characterizes a church active in disaster activities as a congregation with substantial building facilities, larger numbers of staff, larger size, greater numbers of attendance, a larger budget, a centralized authority structure, and a more highly skilled and educated pastor.

In addition to these concrete characteristics, the profile should also include normative characteristics. Churches most active in disaster response indicate the importance of a social as well as spiritual role for both the congregation as a whole and for the pastor. This social role is evidenced before the disaster through higher levels of community involvement by both
the congregation and the pastor and by higher levels of benevolence giving. These same congregations share the norm that the role of churches following a disaster should be more active in meeting the needs of people rather than directing them to other agencies. This willingness to participate actively is important not only because it tends to get congregations involved in disaster response but also because it has already been shown that disaster victims turn to more personal sources of aid first and to bureaucratic relief agencies later.

The final norm related to church disaster response is theology. Theology, ranging from liberal to conservative, is related to a whole complex of other variables measured in this study. For example, in addition to being related to long-term community disaster response, a more liberal theology is also positively associated with the emergency response of pastors ($r = .23$), the importance of the aid received from the national denominational organization ($r = .34$) and the regional denominational organization ($r = .36$), denominational membership in the National Council of Churches ($r = .54$), a less particularistic outlook ($r = .54$), a more centralized authority structure ($r = .39$), and a more complex denominational structure ($r = .29$). Most of these variables also tend to be related to a strong community disaster response.

However, there is also an apparently contradictory trend in the growth of churches that indicates that it is the conservative churches that are growing. They are showing higher percentages of Sunday worship attendance ($r = .42$), increasing budgets ($r = .30$), and larger amounts of budget per member ($r = .44$). Based on measures of growth and participation these churches should also be participating actively in disaster recovery. They are actually less active in disaster response and less active in previous community involvement ($r = .43$). These findings fit well Moberg's characterization of conservative sect-type churches as stressing literal obedience to its scriptures, emphasizing beliefs and rituals designed to satisfy the individual rather than social needs, being aloof from cooperative relationships with councils of churches, and insistent upon individualistic and conversionist approaches to the resolution of social problems, in contrast to more liberal groups, which one would expect to be more cooperative with others and more inclined toward direct involvement in political community affairs (Moberg, 1970:55). In summary, the relationship of all of these normative aspects of churches with disaster response indicates the importance of these less tangible organizational characteristics in determining organizational functioning.

It is also important with this profile to note that it is not only the pre-disaster characteristics of the focal organization which are helpful in understanding organizational functioning, but
also the pre-disaster characteristics of major elements of the organization set or task environment which are also related to the strength of congregational disaster response. Churches whose denominations are characterized by larger amounts of benevolence funds, more complex structures, membership in the National Council of Churches in Christ, larger budgets, larger numbers of churches, encouraging their churches to join ecumenical disaster response efforts, and which have a disaster unit tended to be more involved in disaster responses.

Denominations appear to influence church response through the resources they supply to their congregations, although the path is not well investigated by this study (see Martin, 1976 for a discussion of denominational influence on church disaster response). Denominations supply large amounts of money, materials, and volunteer labor which are then dispersed by the individual congregations. This outside aid, in general, is what is strongly associated with church disaster response. The result is that if certain pre-disaster characteristics of denominational organizations make them more likely to have and provide their church congregations with disaster aid, then the aid received will also make the congregational response stronger. One can, therefore, utilize the same type of analysis on the suppliers of disaster aid as was utilized for church congregations, determining what factors make them more likely to respond following a disaster. The continuity between pre-disaster and post-disaster functioning is apparent at both levels of church structure.

In general, the model has the strength that it focuses attention on a limited number of characteristics of an organization, its context, and its immediate situational conditions which are shown here to be significantly associated with organizational functioning following a disaster. By focusing attention on a limited number of factors which are shown to be related in a conceptual scheme, the analytical framework provides a means for understanding and predicting the response of religious organizations to disaster.

The framework also provides consistent findings with earlier studies of how organizations adapt to new or increased demands which cannot be met using their pre-disaster or remaining post-disaster capabilities. Dynes (1968:59) indicates that when faced with an inconsistency between organizational demands and capabilities organizations attempt to adapt to the new conditions by either controlling the demands or increasing the capabilities. For churches this is illustrated by the fact that participation in emergency recovery activities, including feeding and sheltering operations, is related to their adaptation of church kitchens and
sanctuaries to these new tasks. For several types of church resources it is shown that while possession of these resources is related to a strong community response, lack of these same resources is related to control of demands by rationing them through the development of a member-only response. The acquisition of new resources and the resulting increase in capabilities is illustrated throughout this study with strong relationships between disaster response and receiving outside aid, combining with other denominational churches to form a single response, having a denominational disaster unit, and joining the Xenia Area Inter-Faith Council. Again, the analytical framework is consistent with these findings of previous studies of disaster organizations.

In summary, the conceptual framework works well in the situation studied. The empirical findings indicate that religious organizations do adapt to changes in their environment related to disaster impact. Changes in their organizational activities are directly related to changes in demands associated with the disaster. The pre-disaster context and demand-capability balance are also related to this adaptive response. By looking at the pre-disaster demand-capability balance it is shown that churches already involved in meeting similar community demands and having access to disaster relevant resources are more likely to develop disaster responses. And finally, it is shown that if the post-disaster demand-capability balance shows an excess of demands as compared to capabilities the organization adapts by controlling demands and/or acquiring more resources.

Despite its strengths, the analytical framework is not without problems. One problem is the lack of importance of structural characteristics for understanding church disaster response. Since few of the purely structural elements of the normative/structural component are related to disaster response the search for elements associated with organizational disaster response may have been guided as well by Dynes' (1974) assertion that the major determinants of organized behavior in disasters are an organization's pre-disaster orientation to the community and/or possession of emergency resources. These factors are found in this study to be of much more significance in determining the disaster response of religious organizations than congregational structure. It may be that the types of structures necessary for the types of disaster response of churches are not closely linked with normal everyday structural features and/or are easily developed when the need arises. In this case pre-disaster structure would have little association with post-disaster functioning as compared to established organizations (to use Dynes' terminology), which tend to use their pre-disaster structure to perform regular tasks. While religious organizations may rightly be classified as extending
organizations (organizations utilizing their old structure to meet non-regular tasks) it is also true that the disaster activities of religious organizations are not highly dependent on pre-disaster formal structure. The structural element of this model will be highly important for understanding organizational functioning of organizations whose disaster tasks require a higher level of formalized structure, but do not appear to be of any value in understanding the disaster functioning of church congregations.

Another problem currently found with the analytical framework is its lack of specificity. Closely related to the problem, noted earlier, of knowing whether to categorize a characteristic as part of the normative/structural, member participation and interaction, or resource components, it appears that many characteristics can be included in this analytical framework as part of almost any of the three capabilities components. In this study it was also difficult to make a distinction between disaster conditions as demands and disaster conditions as related to a loss of organizational capabilities. These are two examples of the lack of specificity of the model in certain instances.

There are two means by which the problem of lacking specificity may be reduced. First, a greater effort should be made to define and clarify the meaning of each element in the analytical framework. With clearer definitions it will become more obvious what characteristics are part of the normative/structural component and which are part of the resources component. Secondly, by using the framework it is possible to evaluate and adapt the conceptualization of the elements using empirical data. The relationship between theory and research, discussed in every book on social research methods, can be used to indicate which elements are useful in their current form, which elements need to be re-worked to improve their usefulness, and which elements should be discarded.

Using the data and findings of this study to question the current development of the analytical framework it can first be seen that the organizational context (characterized by using the characteristics of the pre-disaster demand-capability balance) is an important determinant of disaster ($T_2$) functioning. However, the applicability or success of the components of organizational capabilities, a major part of the pre-disaster context, suggests some need for revision. For example, the structural characteristics of church congregations (i.e., centralization, number of decision-making bodies, etc.) show very little association with church disaster response. This may be due to their being no association, in which case these characteristics should be deleted from the model, or due to conceptualization and measurement problems of the characteristics, such as the inapplicability of current organizational concepts to church organizations. At the denominational
level, the characteristic of complexity (the number of denominational organization units) shows a strong positive relationship with both types of community response and a negative relationship with both types of member response. This indicates that the concepts are, to a limited degree, functioning as expected. It may be that church disaster response is handled primarily by the pastor and/or a few congregational leaders and complex pre-disaster structures are not important for the implementation of church disaster response. However, these types of characteristics have considerable support in the literature for their determination of organizational functioning and would limit the generalizability of the framework if they were dropped based on these findings. The more normative characteristics were shown to be very important, thereby justifying their inclusion and suggesting little revision.

The use of membership participation and interaction characteristics was an attempt to measure some of what Haas and Drabek define as the interpersonal structure. It has already been noted that Haas and Drabek were referring to person-to-person interactions when they referred to the interpersonal structure and not to the holistic measures of participation and interaction used here. There is no easy means of measuring those types of interaction in an organization. However, the findings of this study do indicate that for churches it is generally membership size which is related to disaster functioning. There is some indication that higher levels of participation by each member are negatively associated with a strong church disaster response. However, the percentage of members attending Sunday worship services is only one characteristic and its effect is also being accounted for by other variables with which it is closely associated such as theology, previous community orientation, and denominational complexity. It is likely that membership participation and interaction as it is used in this study should be dropped from the analytical framework.

The resource component, both endogenous and exogenous, shows strong associations with church disaster functioning. This component must be an important element of any analytical framework explaining organizational functioning following a disaster. Again, these findings are quite consistent with Dynes' (1974) assertion that the major determinants of organized behavior in disasters are an organization's pre-disaster orientation to the community and/or possession of emergency resources.

The final element, the impact of the disaster, has also been shown to be important for the determination of church disaster activities. The analytical framework assumes that it is possible for disaster impact to affect both the immediate conditions in which an organization must function (i.e., demands) and
the pre-disaster context (i.e., capabilities). Again, further conceptual development may further refine the implications of this study, that disaster impact is more significant regarding its impact on current organizational demands than it is on organizational capabilities.

Although the initial test of this conceptual framework should not be seen as conclusive, the findings of this study do suggest altering the framework as stated above. However, as with any conceptual development, major changes in the framework should not be made on the basis of a single test.

With the strengths of this framework being that it utilizes an open system perspective, that it emphasizes adaptation by the organization to changes in the environment, and that it emphasizes continuity between current functioning and the previous demand-capability balance as part of the context out of which current functioning develops, what remains to be done is to develop and test a more complex causal model. This study has demonstrated the possibilities for a multivariate approach to the analysis of organizational functioning and the demand-capability balance. But a cross-sectional study such as this can only establish relationships between each independent variable and the dependent variable. What is needed for a more complex multivariate model is some understanding of the temporal relationships between the variables which determine the demand-capability balance. This can be accomplished with a further specification and testing of the relationships between the variables which determine the demand-capability balance to make it clear which variables are directly responsible for organizational functioning and which are only indirectly responsible. Through this more detailed understanding it will become clearer which of the more important aspects of organizational functioning are easily affected by changes in the environment such as disaster impact. For example, which has the greater effect on organizational functioning, an increase of demands or a decrease of capabilities? It may be possible that these important elements could be adapted to a changing environment and made less vulnerable to such changes. If other organizational elements are found to be of particular direct importance it may also be possible that organizations wishing to prepare themselves for disasters or other changes could develop these characteristics so as to make their demand-capability balance more resilient to dramatic changes in the environment. The practical benefits of such an understanding are quite significant.

There are also theoretical benefits of a more complex multivariate framework. Much work in Sociology is currently involved in developing and testing limited hypotheses about individual
aspects of organizational functioning. Much of the literature search for variables related to disaster response in Chapter 2 indicates this fact. A multivariate framework would move toward combining some of these isolated findings into a more complex and dynamic theory about changes in organizations over time. While Sociologists generally agree that the study of social change ought to be one of the primary concerns of the field, it is also generally conceded by those in the discipline that this is one of the least developed and understood areas. The development of more complex and dynamic frameworks and theories will work to change the current state of affairs.

Methodological Problems

Some of the reasons why this study is unable to develop and test complex multivariate relationships between the factors associated with organizational response to disaster are related to problems of data collection and analysis. The first of these problems is sample size. While it originally appeared that sending questionnaires to 138 churches in Greene County would yield sufficient data, the return rate of 60% (N=83) substantially reduced the amount of data collected. This is compounded by the amount of missing data related to pastors returning the questionnaire but not answering every question. While the number of unanswered questions appears small, it is stated in Chapter 4 that as few as twenty answered all the questions found to be significantly associated with emergency community response and fourteen answered all of the questions significantly related to long-term community response. The collection of additional data would help remedy this problem somewhat. Also, since many of the variables expected to be related to church disaster response appear to be clearly unrelated these variables could be eliminated from future studies, the questionnaire size could be reduced and the response rate increased.

The analysis is also hampered by the existence of many variables measuring the same dimension. For example, the possession of disaster relevant building facilities is measured using separate indicators of possessing a sanctuary, a kitchen, large rooms, and small rooms. While there are some logical linkages between having a kitchen and a church's ability to prepare and serve food, the general ability to respond to a disaster can be more clearly understood by a composite measure of building facilities. The same can be said of the different measures of participation in church activities. Very little understanding is gained by using five different measures of church participation. The development of composite indexes of some of these general church characteristics
could eliminate some of the confusion found in the analysis of many similar indicators.

After recommending the use of less specific indicators of church characteristics it also appears necessary to recommend the use of more specific indicators for the measurement of church response. The current definition of church response measures the number of different activities that churches are involved in following a disaster. There is no measure of intensity of disaster response used in this study. As stated earlier, the lack of an intensity measure of disaster response may account for the lack of a strong association between congregation size and disaster response in the regression analysis. If an intensity measure of disaster response were to be used in a future study it may be that the importance of some variables, such as size, may increase and the importance of other variables may decrease.

An intensity measure, however, is very difficult to develop and administer. In conversations with pastors in several communities hit by disaster it was found that few congregations keep close records regarding the number of individuals sheltered and fed or the amount of money and other resources distributed. Without this type of information it would be difficult to come up with any measure of intensity for church disaster response. It would also be useful to obtain information regarding the amount of resources received from various sources, but this type of information is also very difficult to obtain accurately. Despite the suggested improvements, it may be discovered that the current measure of disaster response, using the number of activities organized as the indicator, is the best that can easily be obtained.

The measure of inner- and outer-directedness of disaster activities may also provide a further understanding of the type of disaster responses organized if it is possible to make the measure more precise. The current measure simply distinguishes whether the services are provided primarily for congregation members only or for the community in general. More precision, regarding what proportion of aid was actually made available to non-members, and a larger sample size may make it possible to more closely study what factors lead churches to respond to member needs only or to respond to the needs of the community also.

A final recommendation for the improvement of the methodological techniques of this study would be to include time-series data in the design of future studies. This study approximated time-series data by asking pastors to recall certain structural, attendance, and resource figures for the year preceding the disaster and what activities were performed during the emergency period (the week following the tornado) and the long-term recovery period. The recollection of pre-disaster church characteristics appears to be a useful practice since churches normally have such
information on record and anticipation of a disaster event is difficult. Post-disaster activities, though, can be more adequately understood using frequent measurement which would increase their accuracy and improve understanding of the development of church disaster response. For example, this study included any activity performed between one week and fifteen months after the disaster as part of the long-term response. However, some churches may have provided disaster assistance for one month after the tornado and others may have still been providing aid fifteen months after the disaster. Just as with the development of some intensity measure, an indication of when activities were initiated and the length of time they were continued may improve the understanding of church disaster response.

Significance of the Findings

It is the purpose of this study to develop and test sociological hypotheses regarding the explanation of the activities of religious organizations. After having completed the analysis and discussion of the findings it is also necessary to discuss the significance of the findings. Following will be a discussion of the significance of the study, including the understanding of the role of churches, the ability to strengthen existing church response, the support for the demand-capability framework, the attempt to study church congregations as organizations, and the further study of change.

A major significance of this study is the further understanding of the role of churches following disaster and the salient pre-disaster and post-disaster endogenous and exogenous factors associated with this response. No other study has ever attempted to explain church response to disaster in this fashion. The findings clearly point out that elements of the demand-capability balance as determined by the previous organizational context and affected by current situational conditions are associated with the disaster response of religious organizations.

Through this understanding it may be possible to better organize and utilize the resources of churches as part of the overall community disaster response. For example, a major element associated with church response is demands. Churches are faced with demands from within, by church members or church damage, and from the community in general, although it has been shown here that only certain churches respond to such community demands. Because such demands are so closely linked with disaster response it is possible to enter a community following a disaster and determine
what the demands are for different churches. Those churches with the highest level of demands could then be focused on and supplied with outside aid to meet these greater demands.

The importance of outside aid and coordination of efforts for a strong disaster response is a factor which should be brought to the attention of individual churches, denomination organizations, and ecumenical associations. Individual churches can and do organize strong disaster responses. However, these types of responses are exceptional. It appears from these findings that the most active disaster responses are those which are not attempted alone, but in conjunction with other church bodies. Organizing a church disaster response is a difficult task. It requires large amounts of money, resources, leadership, volunteers, building facilities, skilled personnel, and sustained initiative. As shown by the instance of the Wilkes Barre Inter-Faith Flood Recovery Group, which developed only after individual churches found their activities diminishing while their demands continued, it is very difficult for an individual church unit to maintain a long-term disaster recovery program by itself.

Having gained an image of this general lack of success of individual disaster recovery programs, the data also provide some ideas regarding how church disaster response can be strengthened. Church response in Xenia, Ohio is found to be positively related with receiving outside aid, combining with other churches of the same denomination to form a single program, having a denominational disaster unit, and joining the Xenia Area Inter-Faith Council. If these various combined programs are more successful it should be made known to community churches and denominational units so that combined programs might be planned and organized in advance. Several individuals interviewed in communities hit by disaster have suggested the development of national disaster units primarily made up of resource people who can be available to churches and communities to help them structure their church response in the best manner. This sounds very similar to what the founders of the Wilkes Barre Inter-Faith Flood Recovery Group were doing in Xenia and what the Xenia Area Inter-Faith Council has been doing in several other communities since. Through this type of program the knowledge and skills of individuals trained in developing church disaster response are made available to the entire nation with very little warning.

The collection and distribution of aid is another aspect of church response which can be affected by larger combined programs. As documented by Fritz and Matthewson (1957), following most disasters there is a great convergence of material goods. These supplies tend to be in excess of the actual needs, are often comprised of unneeded or unusable goods, congest and take people away
from other disaster activities, cause conflict relations, and may disrupt the local economy. However, it has been shown that receipt of these resources is necessary for a strong church response. Rather than abandoning the collection of resources by outside sources, what is needed is an organized determination of needs followed by the supplying of only those resources needed in a fashion that supports rather than detracts from the overall community response. Most resources should not be collected until the demands are known. Collection points should be well away from the disaster area and sorting and preparation should take place here rather than in the disaster area. Deliveries should also be made as needed rather than as collected so as to relieve those in the disaster area of all tasks except distribution and some storage of small inventories. The handling of volunteers from the outside can be and is being handled in a similar fashion. Tasks for which volunteer labor is suited should be determined. Volunteers should then be arranged to perform these jobs and the housing and feeding of volunteer groups should be taken care of by the coordinating agency. Often, in both Wilkes Barre and Xenia, this task was handled by the ecumenical disaster relief agency.

One problem with the development of larger combined programs is that they might become specialized and lose their flexibility to provide anything to anyone depending on their need. It has already been stated that disaster victims look to their various membership associations for aid only after their family and neighbors (Rosow, 1954). Closely linked to this is the finding by Form and Nosow (1958) that the reason that disaster victims turned to local organizations is that they had the image of "working with people of their own kind, giving immediate physical and spiritual aid 'without asking questions'" (Form and Nosow, 1958:185). If organization of church disaster efforts could not be accomplished without losing the local, personal character of church response the value of such a change would be questionable.

The final way that combined church programs improve church disaster response is that the combined church program can be treated as a unit by the community, local government, industry, and other disaster agencies. Rather than forcing each church and outside organization to form a complex maze of interorganizational relations with all the other agencies and churches in the community, one, or a few, combined representatives of the unified church response could establish these relations.

This type of arrangement has already been shown to have significant consequences. For example, the Wilkes Barre Inter-Faith Flood Recovery Group, acting as representative of a large number of churches, was able to receive local governmental disaster aid to fund its programs, received blankets from the federal government
to distribute to the victims in the community, and received material aid from several large corporations for its disaster program. In addition, denominational units were able to channel their aid through Inter-Faith and eliminate the maintenance of many administrative elements and the duplication of programs. Demands were also handled on a centralized basis through the distribution of "need cards" which requested anyone having needs which were unmet to contact Inter-Faith. Referrals were also made by other community agencies to this group which may have been more difficult with fifty active church disaster programs. There are many ways that combined church disaster programs will improve the response.

It is also likely that there will be some dysfunctional aspects of combining church programs. The most obvious problems are handling authority, dividing the burden of supplying resources, and deciding in which programs to become involved. Although it currently appears that combining programs is beneficial, it may be difficult to convince others of its strength. However, there are already several efforts at combining churches under a single disaster response organization and many of the expected problems may have already been overcome. It is clear that many aspects of ecumenical church disaster organizations are not well understood. It may be that much of the needed information is already available through such organizations as the National Council of Churches, but it is expected that many of these problems will be understood only after further research regarding the consequences of these changes in organizational structure.

One final significant aspect of combined church response to disaster is that it appears that the development of combined programs of church disaster aid may be the only major characteristic found to be related with disaster response which can be easily altered. Looking at the tables listing the factors associated with disaster response (Tables 18 and 19), it can be seen that churches could not easily be asked to change their amount of community involvement, increase their membership, liberalize their theology, build a kitchen, increase their staff, or develop an active social role in order that they might be better prepared for a disaster. These factors all develop out of a complex local and denominational context of resources, norms, values, and structures which are not easily changed. In contrast, the development of a combined disaster program appears to be a most feasible solution.

A discussion of the successful implementation of combined disaster programs is somewhat problematical since this study does not focus on that aspect of church disaster response. This study centers on the development of individual church disaster response. However, there are several conclusions which can be drawn from this study regarding the development of combined disaster response programs.
Looking first at combined denominational programs, this study indicates that long-term church disaster response is linked to the development of a combined denominational disaster program, the importance of national denominational aid received, and the existence of a denominational disaster unit. All three of these characteristics represent concrete denominational structures and/or activities which facilitate church disaster response. Denominations wishing to aid isolated congregations affected by disaster simply need to organize the provision of aid to those churches.

Research gives some limited support for these predictions. Martin (1976) emphasizes the importance of denomination assistance for disaster response and provides some indication of how the aid was organized. In addition, the preliminary study of Wilkes Barre provides some information regarding the development of denominational response. The Roman Catholic Church, for example, organized its disaster response using the existing diocesan structure located in nearby Scranton, Pennsylvania. The Methodist Church created a program utilizing its local conference offices and offices of nearby Wilkes College, a Methodist school. In contrast to the use of formal church structures, the Lutheran churches had a summer day camp operating in Wilkes Barre prior to the flood. After the flood the day camp operations were discontinued and the same personnel operated the Lutheran disaster aid program. In Xenia, the findings indicate that congregations working through these combined programs were more involved in disaster response. The development of similar denominational structures and the development of combined programs should improve the disaster response of local congregations.

These findings are consistent with Skaskolsky's (1967) assertion that concerted efforts to alleviate suffering or to promote altruism or volunteerism can be anticipated only when the institutionalized means of giving effect to it are applied. The findings of this study indicate that denominational disaster response structures are not important during the emergency period. During this first week a majority of Xenia's churches provided shelter, food, clothing, money, and volunteer labor. Local church resources could provide relief to meet these early demands without outside help. However, during the following months, when people are putting their lives, homes, neighborhoods, and communities back together, the support for disaster relief by large structured organizations appears necessary. Churches use both existing and emergent structures for this purpose.

A good example of an emergent structure is an ecumenical disaster recovery organization. Obviously, it is difficult to organize such a group for response during the emergency period, although development can occur quickly (see Forrest, 1972 and Ross,
1976 for a discussion of this process). While participation in ecumenical disaster response organizations is not the focus of this study, it is expected that the findings of this study are applicable to the understandings of ecumenical disaster response organizations. Participation in long-term community response and membership in the Xenia Area Inter-Faith Council involve similar types of activities and are significantly correlated in this study (r=.63). Because of this similarity the use of the demand-capability framework and the findings of this study should be useful for the understanding of joining ecumenical disaster response organizations.

Participation in ecumenical disaster response should be highly related to similar pre-disaster and post-disaster characteristics found to be related to long-term community disaster response in this study. For example, congregational resources are a necessity for any type of disaster response. Long-term community response is associated with the number of various building facilities, the number of ministerial staff, the size of the budget, and the number of members. These relationships appear to emphasize size rather than commitment since the percentage of members attending Sunday worship and the size of the budget per member show negative associations with long-term community response. It is expected that churches joining ecumenical disaster response organizations will also have larger amounts of disaster relevant resources.

Community orientation and normative characteristics are also very important. The findings indicate long-term community response is associated with previous levels of community involvement, a liberal theology, membership in ecumenical organizations, high levels of congregational benevolence giving, and the importance of a secular (in addition to spiritual) role. It is likely that churches joining ecumenical disaster response organizations will have similar normative characteristics.

Another important determinant of church disaster response is demands. This study indicates that the churches most involved in disaster response are those with the highest levels of disaster demands. Active churches have larger amounts of members and church damage and are likely to be closer to the impact area. Demands appear to be an important determinant of all types of church response. It is expected that churches joining ecumenical disaster response organizations will be experiencing higher levels of disaster demands.

Finally, church structure is likely to be an important predictor of participation in ecumenical disaster relief organizations. Both denominational complexity and authority structure are related to long-term community response. The findings indicate
that this association may be due to the importance of denominational aid for long-term disaster response. In addition to having the necessary norms, resources, and demands, it is expected that churches active in ecumenical disaster programs are likely to belong to denominations with more episcopal authority structures and more complex structures.

It is expected that the generalization of these findings to participation in ecumenical disaster response organizations can be accomplished without any major problems. One strong indication is the association between belonging to the Xenia Area Inter-Faith Council and church disaster response. In most cases, those churches involved in church disaster response were also members of the ecumenical group. It is expected that both the use of the demand-capability framework and the findings of this study can be applied to the understanding of membership in ecumenical disaster response organizations.

As with any generalization, the actual applicability of the findings can be assured with further research. Prediction of church participation in ecumenical disaster response organizations can be studied empirically. In doing such research it is necessary to develop some measure of the level of participation. This will eliminate the problem of distinguishing between simple membership and level of participation. It may be that some members do very little. It is also possible that the combined ecumenical disaster response may be less than that organized by the many individual member congregations. It may also be that the increased bureaucratic structure of ecumenical disaster response organizations may cause people to reject the aid, as they sometimes do with the Red Cross, and return to their home congregation for aid. The answers to these questions must be answered by further research.

Another significant aspect of this study is the consistency of the analytical framework used with previous research in sociology. This study supports several trends in the development of disaster research, organizational research, religious organization research, and sociological research in general. To begin, this study supports the current trend in organizational theory toward an open system approach (see Chapter 2 for documentation of this trend). While focusing heavily on the internal characteristics of the demand-capability balance, the framework also incorporates the dynamic quality of an organization adapting to changes based not only on its internal characteristics, but also on the impact of external factors. Internal and external pre-conditions form the context out of which the subsequent demand-capability balance develops. External factors, primarily the suppliers and users of resources and services, and, using Dill's (1958) characterization, regulatory agencies (denomination) and competitors (other churches), also help form the pre-disaster context.
Along with the context, the disaster becomes a second element in the time sequence which combines with the pre-disaster context and results in the disaster functioning. In most cases, disaster impact simply reinforces pre-disaster functioning. There is a great amount of continuity between pre-disaster and post-disaster functioning. The disaster may also work to negate or neutralize many of the pre-disaster conditions by creating overwhelming demands or by decreasing organizational capabilities, although the latter were not found in this study. These same factors can affect both the focal organization and members of the organizational set or task environment and both types of organizations can be studied using the same type of analytical framework. This framework supports the study and explanation of organizational change using a dynamic, open system approach.

This study also further supports the use of the demand-capability balance for the study of disaster response. The demand-capability model used in Haas and Drabek (1973) was first presented by Quarantelli in 1966. Since that time the demand-capability framework has been used in disaster studies of different types of organizations (see for example Taylor, 1976). This study replicates the usefulness of the demand-capability model using another type of organization. This approach also overcomes many of the previous criticisms of models of organizations in disasters based on stable, formalized organizations with limited objectives (Dynes, 1969:151). This study clearly follows and strengthens this trend in disaster research.

As stated in Chapter 1, this study also attempts to follow the break from the "Church-Sect" frame of reference called for by Benson and Dorsett (1971) and utilizes an organizational frame of reference to study the functioning of churches (see for example Moberg, 1964; Harrison, 1959; Snook, 1974; Wood, 1966, 1970, and 1972; Benson and Dorsett, 1971; and Davidson, Schlangen, and D'Antonio, 1969). The results of this use of an organizational approach for the study of local churches somewhat supports this trend. Although many typical organizational variables were not used, church disaster response was found to be associated with authority structure, internal and external resources, size, and greater numbers of skilled personnel. The organizational model clearly provided a useful approach for understanding church disaster response. Although it is not suggested here that all organizational findings of all types are generalizable to the study of churches, this study supports the use of organizational models and theory for the study of churches.

Finally, this study continues the trend desperately needed by sociology of the study and understanding of change. Although dynamic theories and models of social action are more difficult
to develop and test, social change is an element that is inherent in all aspects of social life and must be considered part of even the most limited, formal associations. This study furthers the effort to study and include change as an important element of theories and models of social action. Although this study is only an approximation of a longitudinal study of the effects of disaster on church disaster response it still includes change as an important variable and finds that change is a significant determinant of organizational functioning. It is expected that as the number of models and theories using change as an important variable increases and their success in more closely approximating and understanding reality is made known others will participate in the study of change in social life and build on the previous work. This study is a part of furthering this trend.

Topics for Future Research

Up to this point this study has accomplished the purposes for which it was designed: to describe and analyse the important aspects determining the response of religious organizations following disasters. However, it is inevitable that during such a study many questions which are not a part of the current study will arise. While these questions are not part of the current study, suggestions about how to study these phenomena in a future research effort can often be made by looking at the current data and findings. In this section suggestions for future research will be made.

This study of the response of religious organizations to disaster found that combined relief programs tended to be stronger than programs organized by individual congregations. The suggestion was made that these different types of combined programs should be planned and organized in advance of disaster impact to insure a relatively smooth response. However, before such programs can be set up planners should have some idea regarding who joins such combined programs. Using some of the characteristics studied here, is it possible to discriminate between those churches who join joint programs and those who do not? The current analysis only suggests that encouragement by the denomination and community involvement are associated with joining the Xenia Area Inter-Faith Council. However, if joining combined disaster programs could be found to be associated with other characteristics then the programs could be designed to meet the needs of typical non-joiners and membership drives could be intensified for these churches. Such a study would be a logical spin-off of the current study, asking what type of factors is associated with churches joining joint disaster response programs.
Another topic closely related to the study of participation in joint programs is that of determining the factors associated with the success of joint programs. Are there any characteristics of such programs which make them more successful in organizing a strong disaster response? If combined programs are ecumenical, what types of organizational structure make their operations smoother and more successful in meeting the needs of their communities? If combined programs involve the combination of national, regional, and local level organizations, what types of structuring or authority relations for the local response result in the "best" operations? With the development of more and more types of joint programs it becomes possible to study different types of organizational arrangements to determine which factors are associated with reaching the goals set by the organization. This topic, although closely related to disaster response, is also relevant to much of the current writing in the area of complex organizations on joint programs and interorganizational relations (Aiken and Hage, 1968; Black and Kase, 1963; Reid, 1967; Johns and deMarche, 1951; Miller, 1958; Barth, 1963).

It is also suggested by this research and the findings of other disaster studies that changes in organizations following disaster impact are not only short-term changes related to the immediate demands of the disaster, but also include long-term changes in organizational structure and program. It may be that church congregations which became involved in community disaster response because of the geographical proximity may continue to be involved in helping the community with problem areas that do not disappear, such as problems of the elderly, the poor, the youth, community governance, mental health, housing, unemployment, etc., even after disaster recovery is complete. All of these problems may have been, at one point, needs that were caused or aggravated by disaster impact, but once the community has returned to "normal" many aspects of these problems still remain. Do changes in structure and program carry over into the "normal" period?

There is some information indicating that some disaster programs do carry over into "normal" times. The Wilkes Barre Inter-Faith Flood Recovery Group set up a program, called Project Rebuild, which was designed to provide volunteers to help flood stricken residents of Wilkes Barre repair flood damage to their homes. The program took a long time to set up and has since worked for many months repairing the damaged homes in the community. However, following the flood recovery period it became apparent to the administrators that there were still many poor and elderly people in the community who could utilize their services. This need existed and was unmet prior to the flood, but it was not until a program to meet such needs was set up following the flood that
there was a means of meeting the needs of the people. Currently
the program is still providing inexpensive home repairs for the
needy of Wilkes Barre. What started out as a disaster program has
now developed into a continuing formal program in the community.
There have been many changes which have taken place during the
emergence of an organization from an ad hoc disaster recovery pro­
gram but the organization has remained and continues to function
(see Ross and Smith, 1974).

The final suggestion for future research is to follow up on
the criticisms of the analytical framework. As stated earlier,
the demand-capability balance, used by several studies of disaster,
is primarily a classificatory scheme which indicates what organiza­
tional factors are associated with organizational functioning.
What is needed is to develop and test some more complex relation­
ships between these organizational and environmental factors and
their association with organizational functioning. The current
analytical framework is more of the concatenated type than the
hierarchical type, giving a better concrete, predictive explanation.
Developing a more hierarchical or axiomatic theory would involve
codifying the principles of the field and linking the model to re­
search and findings of other social scientists rather than simply
listing the variables one at a time in a segmental fashion. This
type of framework and analysis would fit well into the current
development of the demand-capability model if one is not satisfied
with accepting the model as fully developed.

Such research would also fit well with studies in the field
of disaster research which spawned and continue to test the
demand-capability model. Following the lead of this and other
studies, the model should also be applied to "non-typical" orga­
izations as well as typical organizations. In the field of disaster
research this might include churches, savings and loan associations,
banks, union organizations, mental health associations, and com­
bined programs of many types. While this does not preclude the
application of the refined model to the more typical disaster or­
ganizations, such as local government agencies, civil defense, Red
Cross, etc., the study of these "non-typical" organizations would
insure the development of a more general model of organizational
functioning in addition to a more complex one.
APPENDIX A

The Questionnaire
TO BEGIN WE WOULD LIKE TO ASK ABOUT YOUR EXPERIENCES AND ACTIVITIES AND THOSE OF YOUR CHURCH CONGREGATION FOLLOWING THE APRIL, 1974 TORNADO.

1. What is the distance from your church to the area affected by the tornado?
   ___ Within the area directly affected by the tornado.
   ___ Less than 1 mile from damaged areas.
   ___ Between 1 and 5 miles from damaged areas.
   ___ Between 5 and 10 miles from damaged areas.
   ___ More than 10 miles from damaged areas.

2. How many households are there in your congregation? (Write in)
   ___ In your congregation approximately how many households experienced the following types of loss? (Write in number)
   ___ Total destruction of house
   ___ Damage to business property
   ___ Major destruction of house
   ___ Short term stoppage of work
   ___ Minor damage to house
   ___ Long term stoppage of work
   ___ Injury
   ___ Death

3. Were church owned buildings damaged by the tornado? (Please check)

<table>
<thead>
<tr>
<th>Total Damage</th>
<th>Major Damage</th>
<th>Minor Damage</th>
<th>No Damage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main church building</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>Clergy living quarters</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>Other</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
</tbody>
</table>

IF CHURCH PROPERTY WAS DAMAGED BY THE TORNADO, ANSWER THE FOLLOWING QUESTIONS. IF NOT, GO ON TO QUESTION 4.

3a. What was the total loss of church property due to tornado damage experienced by your church? $__________ (Write in)

3b. How was this damage paid for? (Check major source)
   ___ Insurance;   ___ Congregation funds;   ___ Denomination funds

3c. As a result of the damage do you plan to or have you already:
   ___ Repaired or rebuilt at the same location
   ___ Rebuilt at another location
   ___ Other (Explain) _____________________________________________________

3d. How long were you unable to utilize your church facilities for normal worship services? (Check one)
   ___ Worship services unaffected
   ___ Less than 1 week
   ___ 1 week to 1 month
   ___ 1 month to 3 months
   ___ 3 months to 6 months
   ___ More than 6 months

3e. If you were unable to utilize your church for normal worship services, where did you hold your services? (Write in name, location, and type of place)_______________________________________________
4. Since the tornado, approximately how many congregation members have come to you for counseling regarding personal problems which were caused by the tornado? ___________ Members (Write in)

5. During the week following the tornado did your congregation, as a congregation, organize to participate in any of the following emergency activities? Please check whether these services were provided primarily for congregation members only (Cong) or for the community in general (Comm).

<table>
<thead>
<tr>
<th>Cong</th>
<th>Comm</th>
</tr>
</thead>
<tbody>
<tr>
<td>_____</td>
<td>Providing emergency shelter</td>
</tr>
<tr>
<td>_____</td>
<td>Providing food or feeding victims and workers</td>
</tr>
<tr>
<td>_____</td>
<td>Providing emergency clothing</td>
</tr>
<tr>
<td>_____</td>
<td>Holding special worship services</td>
</tr>
<tr>
<td>_____</td>
<td>Providing care and counseling for individuals</td>
</tr>
<tr>
<td>_____</td>
<td>Digging out church facilities</td>
</tr>
<tr>
<td>_____</td>
<td>Locating church members</td>
</tr>
<tr>
<td>_____</td>
<td>Providing money for individuals in need</td>
</tr>
<tr>
<td>_____</td>
<td>Providing money for community emergency activities</td>
</tr>
<tr>
<td>_____</td>
<td>Providing volunteer labor for community emergency activities</td>
</tr>
<tr>
<td>_____</td>
<td>Providing space for use by emergency organizations</td>
</tr>
</tbody>
</table>

6. Would you please look at the list above again and CIRCLE the names of each activity you, as pastor of your congregation, were involved in. Circle each activity you participated in.

7. Since the week following the tornado, has your congregation, as a congregation, organized to participate in any of the following long term recovery activities? Please indicate whether these services were provided primarily for congregation members only (Cong) or for the community in general (Comm).

<table>
<thead>
<tr>
<th>Cong</th>
<th>Comm</th>
</tr>
</thead>
<tbody>
<tr>
<td>_____</td>
<td>Providing money to individuals</td>
</tr>
<tr>
<td>_____</td>
<td>Providing furniture</td>
</tr>
<tr>
<td>_____</td>
<td>Providing food</td>
</tr>
<tr>
<td>_____</td>
<td>Providing clothing</td>
</tr>
<tr>
<td>_____</td>
<td>Providing household items</td>
</tr>
<tr>
<td>_____</td>
<td>Providing loans</td>
</tr>
<tr>
<td>_____</td>
<td>Providing volunteers for clean-up or repair activities</td>
</tr>
<tr>
<td>_____</td>
<td>Collecting special disaster offerings</td>
</tr>
<tr>
<td>_____</td>
<td>Locating employment</td>
</tr>
<tr>
<td>_____</td>
<td>Locating housing</td>
</tr>
<tr>
<td>_____</td>
<td>Coordinating and/or housing outside work groups</td>
</tr>
<tr>
<td>_____</td>
<td>Helping individuals in their dealings with relief agencies</td>
</tr>
<tr>
<td>_____</td>
<td>Providing day care facilities</td>
</tr>
<tr>
<td>_____</td>
<td>Providing summer camp for youth</td>
</tr>
<tr>
<td>_____</td>
<td>Providing space for use by relief agencies</td>
</tr>
</tbody>
</table>

(Continued on following page)
8. Would you please look at the list above again and CIRCLE the names of each activity you, as pastor of your congregation, were involved in. Circle each activity you participated in.

9. After normal worship services were resumed, did your church experience a change in attendance at regular church services? (Please check)
   _____ Increase in attendance
   _____ Decrease in attendance
   _____ No change

10. Is your congregation a member of the Xenia Area Inter-Faith Council?
    _____ Yes     _____ No

11. What was, or is, the position of your denomination regarding your particular congregation's joining the Xenia Area Inter-Faith Council?
    _____ Positive, we were encouraged to join.
    _____ Negative, we were discouraged from joining.
    _____ No position was expressed by the denomination.

12. Did the Xenia-Greene County churches of your denomination combine to organize a single denominational relief program (e.g., a combined Baptist relief program)?
    _____ Yes     _____ No

13. Did your congregation receive any aid (e.g., volunteers, money, or material goods) for any tornado relief activities from any source outside your congregation? _____ Yes _____ No
    IF YES, please rate (based on the quantity and usefulness of aid supplied) the importance of the following sources from which you may have received aid since the tornado on the following scale. 1 = Very Important; 4 = Unimportant; 0 = No Aid Received.
    (Circle Choice)

<table>
<thead>
<tr>
<th>Source</th>
<th>Very Impt</th>
<th>Unimpt</th>
<th>No Aid</th>
</tr>
</thead>
<tbody>
<tr>
<td>National denominational organization</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Regional denominational organization</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Other churches of the same denomination</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Other churches outside your denomination</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Individuals (non-congregation members)</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

(continued on following page)
14. One important pastoral role following a disaster is the religious interpretation of disaster. Before you attempted to interpret the tornado to your congregation, were the following interpretations of the tornado held by most, half, some, or few congregation members. (Circle choice)

- Tornado as the result of nature or natural law: Most, Half, Some, Few
- Tornado as the result of fate or chance: Most, Half, Some, Few
- Tornado as God's punishment for sinful man: Most, Half, Some, Few
- Tornado as God's will; not understandable to man: Most, Half, Some, Few

15. Would you please look at the list above again and underline the interpretation of the tornado that comes closest to the interpretation that you have presented to your congregation.

16. What is the denomination of your church? _____________________________

17. In what year was your church congregation founded? 19 ___ (Write in)

18. How many ministerial staff are employed by your congregation? _____

19. Most decisions in a congregation are made in a complex way. In the following areas of church functioning, are most of the major congregational decisions made predominantly by lay leaders or clergy? (Check)

- Lay
- Clergy

- Policy decisions
- Programming decisions
- Financial decisions
- Property decisions

20. In your congregation, how many congregational decision-making bodies are there which make decisions regarding the operation of congregational facilities, programming decisions, financial decisions, and other major decisions necessary for the functioning of your church? ______ bodies. How many lay leaders hold formal decision-making positions on these congregational decision-making bodies? ______ lay leaders

21. In the Spring 1974, how many of the following types of facilities did your congregation have? (Write in number)

- Sanctuary
- Kitchen
- Large social or meeting rooms
- Small class or meeting rooms
22. Regarding church programming and participation, what is the average
NUMBER
- Sunday worship attendance
- Sunday school attendance
- Membership in men's organizations
- Membership in women's organizations
- Membership in youth organizations
- Number of weekly worship services (including Sunday)
- Number of social occasions each month
- Number of congregational newsletters each month

23. What is the total adult membership of your congregation? (Write in)
   Current membership
   Membership in April 1974 at the time of the tornado

24. During the five years before the tornado (1970-1974) did the mem­
   bership of your congregation increase, remain the same, or de­
   crease?
   Increase; ___ Remain the same; ___ Decrease

25. In terms of the distance members reside from the church, which of
   the following statements best characterizes your congregation?
   (Check one)
   ___ Members live widely dispersed at varied distances from the
     church
   ___ Members live in several clusters at varied distances from
     the church
   ___ Members live in one neighborhood close to the church

26. Compared with most other churches in the Xenia-Greene County area,
   does your congregation have a greater, the same, or a smaller
   proportion of:
<table>
<thead>
<tr>
<th>Great</th>
<th>Same</th>
<th>Small</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
   Members over the age of 50
   Youth under the age of 16
   Female members
   Congregation members of more than 10 years
   Non whites
   College graduates
   Factory workers
   Community leaders
   Well-to-do people

27. Which of the following statements best describes the educational
    and occupational make-up of your congregation? (Check one)
    ___ All members share similar educational and occupational levels
    ___ Many members share similar educational and occupational levels
      with a few members from other levels
    ___ Members come from a wide variety of educational and occupa­
      tional levels
28. What is your current congregational budget for 1975? $________
What was your total congregational budget for 1974? $________

29. What is the total amount of benevolences which is sent to district, regional, and national level church bodies? (Write in) $________ Current benevolences for 1975
$________ Benevolences for 1974

30. During the year before the tornado (April 1973 - April 1974), did you, as pastor (Clergy), or your congregation, as a congregation (Cong), participate in any of the following activities? (Write in)

<table>
<thead>
<tr>
<th>Clergy</th>
<th>Cong</th>
</tr>
</thead>
</table>
| ______ | _____ | Contributing funds to community service agencies
| ______ | _____ | Participating in volunteer social service work
| ______ | _____ | Donating goods through social service organizations
| ______ | _____ | Rendering social services directly to the community
| ______ | _____ | Sponsoring outside youth groups
| ______ | _____ | Reading about community problems
| ______ | _____ | Talking about community problems
| ______ | _____ | Belonging to civic organizations
| ______ | _____ | Contacting local officials about some civic problem
| ______ | _____ | Belonging to volunteer committee on some civic problem
| _____  | _____  | Other (Explain) ________________

31. What church body is primarily responsible for selecting and employing local pastors? (Check one)
| ______ | Congregation; | _____ | District or regional level;
| _____  | National level |

32. What church body owns or controls the purchase and sale of local church buildings and property? (Check one)
| ______ | Congregation; | _____ | District or regional level;
| _____  | National level |

33. Before the tornado, did your denomination have a national or regional unit which had as its purpose the administration of community aid programs such as those related to needs following a tornado? ____ Yes; ____ No

34. Which of the following terms best describes the theological position of your church? (Check the term that comes the closest)
| ______ | Fundamentalist
| ______ | Neo-evangelical
| _____  | Liberal
| ______ | Conservative Evangelical
| ______ | Neo-orthodox
| _____  | Other (Explain) ________________

35. The following statements are about your church congregation. Please indicate for each statement whether you strongly agree (SA); agree (A); disagree (D); or strongly disagree (SD) with the statement as it applies to your congregation. Circle undecided (UN) if you cannot make up your mind.
(Continued on following page)
People get personal satisfaction from working in our church.

Our church is concerned with the needs of the un-churched people in the surrounding community.

On the whole the work of our church is well organized.

Part of our program is directed to wider community concerns beyond the internal life of the church itself.

Our church should stick to religion and not concern itself with social, economic, and political questions.

Aside from preaching there is little our church can really do about social, economic, and political questions.

It is proper for our church to state positions on practical questions to the local, state, or national government.

In a disaster situation the role of our church should be primarily one of directing persons to appropriate services rather than playing an active role in rehabilitation.

THERE IS MUCH VARIETY IN THE POSITION OF CHURCHES REGARDING SALVATION. PLEASE INDICATE WHICH OF THE FOLLOWING STATEMENTS BEST DESCRIBES HOW YOU TEACH AND PREACH THE FOLLOWING BELIEFS TO YOUR CONGREGATION.

36a. Do you think belief in Jesus Christ as Savior is:
   ___ Absolutely necessary for salvation
   ___ Probably would help in gaining salvation
   ___ Probably has no influence on salvation

36b. Do you think being a member of your particular religious faith (Denom) is:
   ___ Absolutely necessary for salvation
   ___ Probably would help in gaining salvation
   ___ Probably has no influence on salvation

36c. Do you think that being completely ignorant of Jesus, as might be the case for people living in other countries, will:
   ___ Definitely prevent salvation
   ___ May possibly prevent salvation
   ___ Probably has no influence on salvation

THE FINAL QUESTIONS ARE REGARDING YOU AND YOUR ROLE AS PASTOR

37. What is your present age? _____ Years
   How many years of college (Undergrad, Grad, and Seminary) have you completed? _____ Years
   How long have you been pastor of this congregation? _____ Years
38. Which of the following statements comes closest to your view of your role as pastor? (Check one)
   ___ As a spiritual leader, but with equal importance to being a leader and advocate for your people in the social, political, and economic realms.
   ___ Primarily as a spiritual leader, but with some responsibility as leader and advocate for your people in the social, economic, and political realms.
   ___ Solely as a spiritual leader.

39. Church pastors are daily involved in many different types of activities. Referring to your current pastorate, please rank the following activities based on the amount of time you spend performing each during a normal week. 1 = Most time spent; 10 = Least time spent.
   Rank
   ___ Conducting board or committee meetings
   ___ Personal counseling with individuals who have problems
   ___ Serious study and writing
   ___ Programming and arranging church group activities
   ___ Helping individuals toward Christian decisions and commitment
   ___ Preaching (including sermon preparation)
   ___ Leading in judicatory activities
   ___ General calling in homes
   ___ Teaching and training adults or youth (including lesson preparation)
   ___ Giving community leadership on crucial social issues

40. If there is any aspect of your congregation's tornado recovery activities which was not covered or may be misunderstood by the preceding questions, please feel free to indicate it in the space below.

THANK YOU VERY MUCH. PLEASE MAKE SURE YOU HAVE ANSWERED BOTH SIDES OF EACH PAGE. PLEASE RETURN THE COMPLETED FORM TO US IN THE RETURN ENVELOPE.
August 14, 1975

Dear Pastor:

Two weeks ago I contacted you in connection with my study of the response of churches following the April, 1974 tornado. I asked you to answer a short questionnaire and emphasized that neither my Ph.D. dissertation nor any reports made available to you or other churches faced with similar circumstances would be of any significant value unless questionnaires were received from each and every church.

If you are having problems, please fill out the questionnaire as best you can and note the problems on the form.

Although I realize that you are busy with normal church activities or are taking advantage of the summer months for travel and vacation, I would again like to ask you to help me with this study by answering the questionnaire.

Thank you.

Sincerely,

Martin H. Smith
Research Associate
Disaster Research Center

September 14, 1975

Dear Pastor:

Since I last contacted you in connection with my study of the activities of churches following the April, 1974 tornado, the response to my questionnaires has been most encouraging. I soon expect to have information on almost every church in Greene County. I hope that you too will find it easier to answer the questionnaire during the Fall.

However, my time schedule also demands that I soon begin analysis of the information. To assure the accuracy of the information I would again like to encourage you to help me with this study by answering the questionnaire.

If you have any problems, please contact me. For those who have already responded, I express my sincere appreciation.

Sincerely,

Martin H. Smith
Research Associate
Disaster Research Center
July 28, 1975

Dear Pastor:

As part of my Ph.D. dissertation, and in conjunction with the Disaster Research Center, I am conducting a study of the recovery activities of churches following disasters. We at the Center need your assistance as a minister in the Greene County religious community to get accurate information for the study. Enclosed you will find a questionnaire regarding the tornado recovery activities of churches in the Greene County area. Although we realize that there is a wide variety in the types of activities carried on by churches following the 1974 tornado, it is our goal to obtain information on the entire range of church recovery activities. We believe such information will be valuable in helping other communities to utilize church recovery activities more effectively and to help plan church relief activities in the future. We need your help in this effort.

Since we recognize the many demands on your time, we have designed a questionnaire in which most of the questions can be answered by simply checking the appropriate spaces or writing in a word or two. We hope that you will take some time to complete this form so we may gain an understanding of every church and the whole range of recovery activities.

Please answer all questions. If you wish to modify or explain an answer, make a note to that effect in the margin next to the question, but still mark the answer that comes closest to being your answer.

All responses will be kept strictly confidential. No one except the Disaster Research Center staff will see these questionnaires. Any published analysis will be in the form of broad statistical categories. A summary of the final study will be available to any of you who request it.

When you have completed the questionnaire, please place it in the return envelope enclosed and mail it back. No postage is required. We would appreciate it if you would complete and return this form at your earliest convenience.

Thank you for your cooperation.

Sincerely,

Martin H. Smith
Research Associate
September 1, 1975

Dear Pastor:

My postcard and phone conversation with many of you about my study of the tornado recovery activities of churches produced many comments from pastors that the questionnaires had arrived during vacation time and had been misplaced in the stacks of vacation mail. Assuming that many of you have had the same problem, I thought that it might be easier to simply send you another copy.

In doing so, I know I run the risk of making you feel that you are being bothered too often. The fact is that there is no other church that was involved in recovery activities in the same way as your church. There are no typical churches! Even if your church was not hit by the tornado or was not involved in tornado recovery activities, I continue to hope that I might hear from you.

If you were not pastor of this church at the time of the tornado or if this church has no pastor, please have an Elder or some other member of the congregation familiar with your church's tornado recovery activities fill out the questionnaire.

If you have already begun to fill out the first copy of the questionnaire which I sent you, please go on and complete it and simply discard this second copy.

Thank you for your continuing patience and for your help.

Sincerely,

Martin H. Smith
Research Associate
APPENDIX B

Operationalization of Variables

While it is obvious how some of the variables used in this dissertation were measured, in many cases it is not. Many were measured by simply using the information directly off the questionnaire in Appendix A. However, other variables represent more complex operationalization processes. The following is a list of the operationalization process for each variable used in this study. For those variables using composite indicators reliability scores are also given. References to specific questionnaire items are also given.

Emergency Community Disaster Response: (Question 5) is measured by summing the number of emergency disaster recovery activities in which the church was involved. To distinguish between activities which were provided primarily for the congregation members only and those activities provided for the community in general, member-only activities are given a score of one and community activities are given a score of two. Alpha = .82.

Emergency Member Disaster Response: (Question 5) is measured by summing the number of emergency disaster recovery activities provided for members only in which the church was involved. Each activity is given a score of one. Alpha = .78.

Long-Term Community Disaster Response: (Question 7) is measured by summing the number of long-term disaster recovery activities in which the church was involved. To distinguish between activities which were provided primarily for congregation members only and those activities provided for the community in general, member-only activities are given a score of one and community activities are given a score of two. Alpha = .88.

Long-Term Member Disaster Response: (Question 7) is measured by summing the number of long-term disaster recovery activities provided for members only in which the church was involved. Each activity is given a score of one. Alpha = .86.

Polity: (Questions 31-32) is measured by asking at what level decisions regarding selecting pastors and purchasing property were made. Congregational decisions are scored one; regional decisions are scored two; national decisions are scored three. Polity score is created by summing the two scores. Alpha = .57.
Denominational Complexity: (1975 Yearbook) is measured by the number of denominational organizations and agencies listed in the 1975 Yearbook of American and Canadian Churches.

Number of Denominational Meetings: (1975 Yearbook) is measured by the number of meetings held each four year period.

Number of Denominational Periodicals: (1975 Yearbook) is measured by the number of denominational periodicals listed in the 1975 Yearbook.

Theology: (Question 34) is measured using a question asking pastors what term best describes their church. Terms are scored from conservative to liberal: fundamentalist = 1, conservative evangelical = 2, neo-evangelical = 3, neo-orthodox = 4, and liberal = 5.

National Council of Churches Membership: (1975 Yearbook) is measured by a membership list in the 1975 Yearbook.

Denominational Benevolence Giving: (1975 Yearbook) is measured using the amount of benevolence giving reported in the 1975 Yearbook.

Church age: (Question 17) is measured by calculating the number of years since the congregation was founded.

Church Community Orientation: (Question 30) is measured by counting the number of community activities in which the congregation had participated the year preceding the tornado. Alpha = .87.

Church Benevolence Giving: (Question 29) is measured by the amount of benevolence giving reported for 1975. The amount of giving per member was computed by dividing the total amount by the number of church members. Whether the benevolences were increasing, remaining the same, or decreasing was determined by comparing the 1974 and 1975 reported levels of giving.

Spiritual vs. Social Role: (Questions 35 e-g) is measured by three items asking whether the church sees its role as spiritual or involved with social, economic, or political aspects. Items are scored such that strongly agree with a spiritual role = 1, agree = 2, undecided = 3, disagree = 4, strongly disagree = 5. Alpha = .67.

Active Disaster Role: (Questions 35 h) is measured by asking whether the church sees its disaster role as directing rather than active. Item is scored strongly agree = 1, agree = 2, undecided = 3, disagree = 4, strongly disagree = 5.

Particularism: (Question 36 a-c) is measured by asking whether certain beliefs are absolutely necessary for salvation. The particularism
score is created by summing the number of items that are absolutely necessary for salvation. Alpha = .55.

Centralization of Decision-Making Structure: (Question 19) is measured by asking whether policy, programming, financial, and property decisions are made by clergy or laity. Score is calculated by summing the number of decision-areas handled by clergy. Alpha = .73.

Complexity of Decision-Making Structure: (Question 20) is measured by the actual number of church decision-making positions and decision-making leaders.

Membership in the Xenia Area Inter-Faith Council: (Question 10) is measured by asking churches if they are a member.

Pastor's Administrative Role: (Question 39) is measured by asking pastors to rank (1 = most time spent to 10 = least time spent) activities based on the amount of time spent on each. The score is computed by summing the rankings for 1) counseling, 2) programming, 3) leading judicatory activities, 4) calling in homes, and 5) community leadership. Alpha = .92.

Pastor's Spiritual vs. Social Role: (Question 38) is measured by asking pastors if they viewed their role as both spiritual and social = 1, primarily spiritual with some social responsibility = 2, or solely a spiritual leader = 3.

Pastor's Community Orientation: (Question 30) is measured by counting the number of community activities in which the pastor had participated the year preceding the tornado. Alpha = .87.

Communal vs. Associational Membership: (Question 25) is measured determining the geographical distribution of the members: 1 = widely dispersed, 2 = moderately dispersed, 3 = little dispersion.

Social Homogeneity: (Question 27) is measured by the similarity of members' educational and occupational levels: 1 = mostly similar, 2 = moderately similar, 3 = little similarity.

Sunday Worship Attendance: (Question 22) is measured by asking the average number attending. Percent attending is calculated using total membership reported.

Sunday School Attendance: (Question 22) is measured by average reported Sunday school attendance.

Membership in Men's Organization: (Question 22) is measured by average reported membership.
Membership in Women's Organization: (Question 22) is measured by average reported membership.

Membership in Youth Organization: (Question 22) is measured by average reported membership.

Number of Weekly Worship Services: (Question 22) is measured by the reported average number of services.

Number of Social Occasions: (Question 22) is measured by the reported average number of occasions each month.

Number of Congregational Newsletters: (Question 22) is measured by the reported average number of newsletters each month.

Budget: (Question 28) is measured by the reported budget for 1975. Amount of budget per member was calculated using reported membership size. Whether the budget was increasing, remaining the same, or decreasing was determined by comparing the 1974 and 1975 budgets.

Size: is measured by both the reported number of members (Question 23) and the reported number of families (Question 2).

Membership Growth: (Question 24) is measured by asking whether membership had increased, remained the same, or decreased during the preceding 5 years (1970-1974).

Number of Ministerial Staff: (Question 18) is measured by the reported number of ministerial staff employed.

Church Facilities: (Question 21) is measured by the reported numbers of sanctuaries, kitchens, large rooms, and small rooms which the church had before the tornado.

Pastor's Age: (Question 37) is measured by reported age in years.

Pastor's Education: (Question 37) is measured by reported number of years of college completed.

Pastor's Tenure: (Question 37) is measured by reported number of years pastor has been at present congregation.

Membership Age: (Question 26) is measured by two items asking whether the congregation, compared with other Xenia churches, has a greater, the same, or a smaller proportion of members over the age of 50 and youth under the age of 16.

Length of Membership: (Question 26) is measured by whether the congregation, compared with other Xenia churches, has a greater, the
same, or a smaller proportion of members of more than 10 years.

Social Status: (Question 26) is measured by four single items asking whether the congregation, compared with other Xenia churches, has a greater, the same, or a smaller proportion of college graduates, factory workers, community leaders, and well-to-do people. A composit SES score is computed by summing the scores for all four items (1 = greater, 2 = the same, 3 = smaller) after reversing the score for factory workers. Alpha = .63.

Number of Denominational Churches: (1975 Yearbook) is measured by the number of churches reported. The change in the number of churches is the proportionate change in size between 1970 and 1975.

Number of Denominational Members: (1975 Yearbook) is measured by the number of members reported. The change in the number of members is the proportionate change in size between 1970 and 1975.

Denominational Budget: (1975 Yearbook) is measured by the budget size reported. The change in budget is the proportionate change in size between 1970 and 1975.

Number of Denominational Clergy: (1975 Yearbook) is measured by the number of clergy reported.

Denominational Disaster Unit: (Question 34) is measured by asking churches if their denomination had a disaster unit before the tornado.

Damage to Church: (Question 3a) is measured by the reported dollar loss to church property.

Member Damage: (Question 2) is measured by seven items asking the number of members suffering 1) total distraction, 2) major distraction, and 3) minor damage to house, 4) injury, 5) damage to business property, 6) short work stoppage, and 7) long work stoppage. Percentages for each type of damage are calculated using number of church members.

Distance from Disaster Area: (Question 1) is measured by asking whether the church is located within the impact area = 1, less than one mile from damaged area = 2, between 1 and 5 miles = 3, between 5 and 10 miles = 4, and more than 10 miles = 5.
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