

AMERICAN RELIGIOUS ORGANIZATIONS IN DISASTER: A STUDY OF CONGREGATIONAL RESPONSE TO DISASTER

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This study develops and tests sociological hypotheses explaining the participation in disaster response activities by eighty-six congregations in Xenia, Ohio following a tornado. The analytical framework conceptualizes all organizations as having a demand-capability balance. That is, there are demands for services which are met by organizational resources. During normal times, the demand-capability balance is 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. A disaster alters this balance by providing a new set of immediate conditions and changing previous contextual elements. This changed balance influences both organizational characteristics and organizational activities. This framework is used to predict congregation disaster response using elements of the pre-disaster demand-capability balance and disaster conditions.

BACKGROUND

In the past, studies of community disasters and disaster recovery have tended to ignore the activities of religious organizations. Interest has focused on other community organizations, such as, police and fire departments, or

hospitals which have regular pre-disaster tasks that are the same or similar to the tasks which they perform following disaster impact. Groups which engage in disaster behavior somewhat different from their everyday tasks, have been much less studied.

Thus, in most studies which have dealt with religious behavior in disasters (for example, Ahler and Tamney, 1964; Dynes and Yutzy, 1965) church activities are only peripherally described. In particular, there exist almost no studies aimed at understanding the level of involvement and differential response of individual organizations or congregations in the entire community. The study by Davis (1970) is an exception but it is primarily a descriptive account. Martin (1976) has recently presented an extensive study of church activities following a flood. However, his study focuses on the larger denomination rather than on individual community congregations.

Despite this lack of attention given to religious organizations in disaster by researchers and disaster planners, community congregations are involved in recovery activities at all stages of disaster. One descriptive study (Moore, 1958) reports that congregations collect and distribute food, clothing, money, furniture, and other physical goods and provide many needed services. Regular congregation and clergy activ-

ities are also expanded following disaster. This role has been shown to be closely linked to the overall community disaster response because of the victim's preference for local, personal relief activities, the ability of congregations to effectively organize volunteers and control the flow of donated material aid, and the flexibility of congregations to meet unmet needs in the community (Smith, 1977).

A more in-depth understanding of the differential responses of individual community religious organizations is provided by an exploratory study, conducted by the Disaster Research Center, of congregation activities in Wilkes Barre, Pennsylvania following the flood of 1972. From interviews conducted with the pastors or leaders of nine religious organizations it appeared that active congregation disaster response is related to proximity to disaster area, previous community involvement of the congregation, damage to congregation facilities and member's homes, and levels of congregational and denominational resources. This study of Wilkes Barre congregations provides evidence of the possibility for predicting the disaster response of individual community congregations using certain pre-disaster and post-disaster characteristics (Ross and Smith, 1974).

THE ANALYTICAL FRAMEWORK

The analytical framework developed in this paper for the explanation of congregation disaster response reflects two trends in sociology. The first trend is the expansion of the conceptualization of disaster organizations to include those organizations which perform tasks and develop structures that are different from their pre-disaster tasks and structures. Religious organizations are classified as extending organizations since they are "extending their activities into new and unexpected functions for them during the emergency period" (Dynes, 1974: 145). This has expanded the range of organizations studied following disasters to include church congregations, financial institu-

tions, mental health systems, etc.

The second trend is the use of an organizational perspective to study religious organizations (see, for example, Moberg, 1964; Harrison, 1959; Snook, 1974; Wood, 1970 and 1972; Wood and Zald, 1966; Benson and Dorsett, 1971; and Davidson et al., 1969). This deviation from the traditional "Church-Sect" frame of reference both avoids some of the criticisms of earlier frames of reference (Benson and Dorsett, 1971) and links studies of congregations in disaster with studies of other disaster organizations.

Consistent with developing an organizational perspective to study congregations and borrowing heavily from the perspective of organizational functioning proposed by Haas and Quarantelli (1964; more extensively presented in Haas and Drabek, 1973), the analytical framework used here views an organization 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

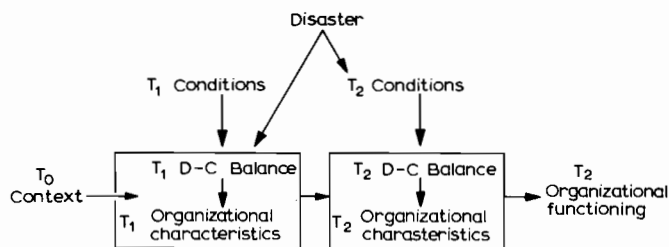


Fig. 1. Determinants of post-disaster organizational functioning.

organizational functioning following disaster, adjustments must be made for the impact on some of the more established contextual elements. These changes affect both the post-disaster demand-capability balance and the organizational disaster response (see Fig. 1).

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 et al., 1972). Recently Taylor (1976) has made extensive use of this approach by combining it with a collective behavior perspective to analyse an emergent mental health system response to disaster.

HYPOTHESES

Utilizing the demand-capability framework to predict congregation disaster activities, the first hypothesis states that there is a positive relationship between demands and congregation disaster functioning. Internally, demands for congregation disaster response activities are measured as a function of the damage to congregation facilities, members' homes and business property, and the loss of members' employment. The measurement of external demands is more problematic. However, the congregation's distance from the disaster area is likely to be associated with the needs of the general community being seen as legitimate demands within the congregation's domain. It is hypothesized that *congregations with greater demands will be more involved in disaster response*.

The second component of the demand-capability balance, organizational capabilities, is composed of three dynamic elements: 1) the normative/structural element, 2) the member participation and interaction element, and 3) the resource element.

The normative/structural element includes both abstract norms which are clustered into roles, positions, and system domains (Haas and Drabek, 1973: 110) and the structural and

programmatic consequences of these norms. Based on a review of the disaster, organization, and religion literatures it is expected that congregations involved in disaster response will be characterized by a more liberal theology [1], a higher level of community involvement [2] and benevolence giving, a more social (vs. spiritual) congregation role [3], an active disaster role definition [4], a less particularistic outlook [5], a decision-making process more centralized around the pastor [6], and larger numbers of members and congregation bodies associated with the decision-making process [7]. It is hypothesized that *congregations with normative/structural characteristics most adaptable to disaster functioning will be more involved in disaster response*.

The second element of organizational capabilities, member participation and interaction, is measured using pre-disaster levels of participation and communication by congregation members in various congregation programs. Most congregations keep formal records regarding Sunday worship attendance, Sunday School attendance, membership in men's, women's, and youth organizations, and the frequency of social occasions, worship services, and congregation newsletters. It is hypothesized that *congregations with higher pre-disaster rates of participation and communication will be more involved in disaster response*.

The final element of organizational capabilities is organizational resources. Congregation resources closely linked with organizing a disaster response include congregational budget, membership size, staff size, and possession of certain building facilities such as a kitchen, a sanctuary, and other miscellaneous rooms. It is expected that *congregations with larger amounts of these disaster relevant resources will be more involved in disaster response*.

RESEARCH SITE

The location selected to test these hypotheses is Xenia, Ohio. In 1974 Xenia had a

population of 25,000 and was encircled by Greene County, population 125,000. Within Greene County there were 138 individual congregations ranging in size from 10 to 3,200 members representing 35 different denominations. Compared to national statistics the make-up of the denominations tends to overrepresent conservative and fundamentalist protestant theologies. One-third of the congregations were situated in Xenia and the remainder were located within a ten mile radius of the city.

On April 3, 1974 a tornado hit Xenia leaving 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 congregations was extensive.

To measure congregation response an exhaustive list of disaster activities was developed using interviews with emergency organization and congregation personnel and local newspaper accounts. Congregation response was measured using two indexes: the first counts the number of different recovery activities performed during the emergency period (the week following the tornado) [8]; the other counts the number of different recovery activities performed after the emergency period [9]. The intensity of each activity could not be accurately measured since congregations did not keep records of the numbers and extent to which disaster victims were helped. As a crude measure of intensity activities performed for members of the community in general were counted twice those activities performed for members only.

A questionnaire was developed to measure the elements of the demand-capability ratio and congregation disaster response. It was pre-tested using six congregations in Columbus, Ohio which were of the same general denominational make-up as those in Xenia. It was also reviewed by the leaders of an ecumenical disaster organization in Xenia.

The questionnaire was sent to the pastors of

the 138 congregations in Greene County in July 1975, 16 months after the impact of the tornado. After a two month response period 60% (N = 83) of the questionnaires were returned. Tests for response bias indicated that there were no significant differences between respondents and non-respondents regarding geographical and denominational make-up. Response bias regarding disaster activities was accomplished by dividing congregations into early, middle and late responding groups and by assuming that any trends found could be generalized to the non-responding group. Analysis indicated that late responders, and therefore, non-responders, were slightly less involved in congregation disaster response.

FINDINGS

Presented below are the findings which test the four hypotheses relating the various indicators of organizational demands and capabilities with congregation disaster response [10].

Demands

Focusing first on disaster demands, it can be seen in Table I that the distance of the church building from the impact area is significantly related to both emergency and long-term disaster response. The correlations of 0.40 and 0.41 are among the strongest found in this study and indicate that the closer a congregation is to the disaster area the more involved it is in both types of disaster response.

Damage to church buildings is also shown to be related to congregation disaster response. Congregations suffering larger losses as a result of the tornado are more involved in long-term disaster response ($r = 0.30$).

Member damage is tested using both the number of households experiencing different types of damage and the percentage of the total congregation that this number represents. Congregations involved in both types of disaster response are more likely to have larger numbers

TABLE I
Correlation Between Disaster Demands and Disaster Response

Variable	Type of disaster response	
	emergency response	long-term response
Distance from impact area	$r = 0.40^{***}$ $n = 83$	0.41^{***} 81
Damage to church (dollar loss)	$r = 0.15$ $n = 82$	0.30^{**} 80
Damage to Members . . .		
Number with total damage	$r = 0.21^*$ $n = 81$	0.30^{**} 79
Percent with total damage	$r = 0.12$ $n = 69$	0.13 69
Number with major damage	$r = 0.15$ $n = 81$	0.31^{**} 79
Percent with major damage	$r = 0.31^{**}$ $n = 69$	0.42^{***} 69
Number with minor damage	$r = 0.27^{**}$ $n = 81$	0.29^{**} 79
Percent with minor damage	$r = 0.26^*$ $n = 69$	0.06 69
Number with injury	$r = -0.02$ $n = 80$	0.05 78
Percent with injury	$r = 0.21^*$ $n = 68$	0.12 68
Number with business damage	$r = -0.06$ $n = 81$	0.10 79
Percent with business damage	$r = 0.04$ $n = 68$	0.29^{**} 68
Number with short work stoppage	$r = 0.04$ $n = 81$	0.17 81
Percent with short work stoppage	$r = 0.06$ $n = 69$	0.02 69
Number with long work stoppage	$r = 0.25^*$ $n = 81$	0.43^{***} 79
Percent with long work stoppage	$r = -0.01$ $n = 69$	0.09 69

* $p < 0.05$

** $p < 0.01$

*** $p < 0.001$

of households experiencing total damage ($r = 0.21$ and 0.30), major damage ($r = 0.15$ and 0.31) and minor damage ($r = 0.27$ and 0.29) and are more likely to have more households experiencing long periods of employment loss ($r = 0.25$ and 0.43). Emergency response is significantly associated with the percentage of households with major damage ($r = 0.31$),

minor damage ($r = 0.26$) and the percentage of households experiencing injury ($r = 0.21$). Long-term disaster response is associated with the percentage of households with major damage ($r = 0.42$) and business loss ($r = 0.29$).

These findings indicate that congregations with greater demands are more involved in disaster response.

Normative/Structural Characteristics

Some capabilities of congregations presented in Table II are also significantly associated with congregation disaster response. Both emergency and long-term disaster responses tend to be associated with the normative characteristics of a more liberal theology ($r = 0.17$ and 0.39), a more positive community involvement ($r = 0.34$ and 0.55), higher levels of benevolence giving ($r = 0.36$ and 0.30), a more social (vs. spiritual) role ($r = 0.19$ and 0.26), and a more active disaster role definition ($r = 0.23$ and 0.21). Particularism is not significantly associated with either type of disaster response.

The more structural factors, centralization and complexity, are unrelated to congregation disaster response. It may be that these types of structural elements are not developed within congregations to the point where they significantly affect their functioning.

In summary, nine of the eighteen correlations are significant, supporting the hypothesis that normative/structural characteristics affect congregation response to disaster.

Member Participation and Interaction

Measures of pre-disaster participation and interaction are also significantly associated with disaster response as shown in Table III.

Emergency response is positively associated with Sunday worship attendance ($r = 0.32$), Sunday school attendance ($r = 0.29$) and with woman's organization membership ($r = 0.30$) and youth organization membership ($r = 0.32$). Long-term response is associated with women's

TABLE II

Correlations Between Normative/Structural Congregation Characteristics and Disaster Response

Variable	Type of disaster-response	
	emergency response	long-term response
Theology	$r = 0.17$ $n = 61$	0.39^{***} 61
Community orientation (previous involvement)	$r = 0.34^{**}$ $n = 70$	0.55^{***} 70
Benevolence giving	$r = 0.36^{**}$ $n = 55$	0.30^{**} 55
Importance of social (vs. spiritual) role	$r = 0.19^*$ $n = 77$	0.26^* 77
Active disaster role	$r = 0.23^*$ $n = 77$	0.21^* 77
Particularism	$r = 0.09$ $n = 75$	-0.13 75
Centralization (number of clergy decisions)	$r = 0.05$ $n = 75$	0.05 75
Complexity (number of decision-making bodies)	$r = -0.03$ $n = 69$	-0.02 69
Complexity (number of decision-making leaders)	$r = -0.05$ $n = 71$	-0.07 71

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

organization membership ($r = 0.42$) and the number of social occasions each month ($r = 0.31$).

Using the percentage of the members who attend Sunday worship as a measure of participation results in negative associations with both types of disaster response ($r = -0.33$ and -0.34). This indicates that congregations with higher levels of worship participation are less likely to participate in either type of disaster response.

While only a third of the member participation and interaction characteristics are positively associated with disaster response there is a general positive association between membership levels (size) and both types of congregation disaster activities. However, the findings for percent Sunday worship attendance indicate

TABLE III

Correlations Between Member Participation and Interaction and Disaster Response

Variable	Type of disaster response	
	emergency response	long-term response
Total Sunday worship attendance	$r = 0.32^{**}$ $n = 74$	0.17 73
Percent Sunday worship attendance	$r = -0.33^{**}$ $n = 70$	-0.34^{**} 70
Total Sunday School attendance	$r = 0.29$ $n = 72$	0.07 72
Men's organization membership	$r = 0.19$ $n = 72$	0.19 72
Women's organization membership	$r = 0.30^{**}$ $n = 72$	0.42^{***} 72
Youth organization membership	$r = 0.32^{**}$ $n = 73$	0.18 73
Number of newsletters per month	$r = 0.01$ $n = 74$	0.10 74
Number of social occasions per month	$r = 0.11$ $n = 71$	0.31^{**} 71
Number of weekly worship services	$r = 0.05$ $n = 74$	0.05 74

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

that the more a congregation is oriented toward worship activities the less likely it will be active in disaster activities.

Resources

Congregation resources, presented in Table IV, all tend to show significant positive associations with both types of congregation disaster response. The size of the congregation budget per member was tested to determine whether it was size or the percent of members committed which is important. As with attendance, it appears that size is more important than high levels of member commitment. It can be seen that both types of disaster response are related to the number of members ($r = 0.27$ and 0.18) and to the number of households ($r = 0.26$ and 0.27). Finally, three of the four types of building facilities are also significantly

TABLE IV

Correlations Between Congregational Resources and Disaster Response

Variable	Type of disaster response	
	emergency response	long-term response
Congregational budget	$r = 0.32^{**}$ $n = 59$	0.21 59
Congregational budget per member	$r = -0.33^{**}$ $n = 59$	-0.31^{**} 56
Number of members	$r = 0.27^*$ $n = 72$	0.18 72
Number of households	$r = 0.26^*$ $n = 71$	0.27^* 71
Number of ministerial staff	$r = 0.38^{***}$ $n = 80$	0.22^* 79
Having a kitchen	$r = 0.48^{***}$ $n = 77$	0.37^{***} 77
Having a sanctuary	$r = 0.32^{**}$ $n = 77$	0.19^* 77
Having large rooms	$r = 0.41^{***}$ $n = 77$	0.30^{**} 77
Having small rooms	$r = 0.08$ $n = 77$	0.01 77

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

related to both types of congregation response. Overall, the findings regarding congregation resources support the fourth hypothesis.

Multivariate Analysis

The results of the step-wise regression analysis are presented in Tables V and VI. The analyses indicate that distance from the impact area (a demands element) has a larger beta weight than any other variable for both types of disaster response ($B = 0.47$ and 0.50). For emergency response the four variables percent Sunday worship attendance ($B = 0.28$), having a kitchen ($B = 0.26$), the number of members attending Sunday worship ($B = 0.22$), and community orientation ($B = 0.19$), are shown to be of about equal importance. One each of the four model elements are selected as a determinant of emergency congregation response.

TABLE V

Multiple Regression Analysis of Variables Predicting Emergency Congregation Response

Variable	Mult R	R ²	Simple r	Beta
Having a kitchen	0.48	0.23	0.48	0.26
Distance from impact area	0.62	0.39	0.40	0.47
Percent Sunday worship attendance	0.69	0.47	-0.33	-0.28
Number of members attending Sunday worship	0.72	0.52	0.32	0.22
Community orientation	0.74	0.54	0.34	0.19
Multiple R	0.74			
R square	0.54			
Standard error	3.94			
Analysis of variance	df	Sum of squares	Mean square	F-ratio
Regression	5	799.2	159.8	10.29
Residual	43	667.7	15.5	$p < 0.001$

The analysis of long-term congregation response indicates that, in addition to distance from the impact area, community orientation ($B = 0.34$), percent Sunday worship attendance ($B = -0.27$), and membership in women's organizations ($B = 0.22$) are selected as im-

TABLE VI

Multiple Regression Analysis of Variables Predicting Long-Term Congregation Response

Variable	Mult R	R ²	Simple r	Beta
Community orientation	0.54	0.30	0.54	0.34
Distance from impact area	0.68	0.47	0.41	0.50
Percent Sunday worship attendance	0.74	0.54	-0.34	-0.27
Membership in women's organizations	0.76	0.58	0.42	0.22
Multiple R	0.76			
R square	0.58			
Standard error	6.09			
Analysis of variance	df	Sum of squares	Mean square	F-ratio
Regression	4	2070	517.6	13.97
Residual	41	1518	37.0	$p < 0.001$

portant determinants. Resources was the only model element which does not have a variable selected by the analysis.

In summary, the multiple regression analysis explains 54% of the variance in emergency response and 58% of the variance in long-term response. Variables tended to be chosen from each element of the demand-capability framework. While disaster demands, measured by distance from the disaster area, is the element with the largest Beta values, approximately half of remaining explained variance is accounted for by the selected capability variables.

DISCUSSION AND CONCLUSIONS

The major finding of this study is that the conceptual framework works well for explaining congregation response to disaster. First of all, the findings indicate that religious organizations do adapt to changes in their environment related to disaster impact close to the congregation. These changes in their organizational activities are related to changes in demands as a result of the disaster, such as the amount of damage experienced by the congregation, its members, and the surrounding community. It is possible that the environmental changes associated with the increase in demands might also reduce the organization's capabilities; however, there is no indication of this.

The pre-disaster demand-capability balance is also related to this adaptive response. Each of the three capability elements studied has shown a number of significant correlations with congregation disaster response. The test of the hypothesis relating normative/structural congregation characteristics and disaster response supports this statement. Pre-existing normative variables, such as church theology, community orientation, benevolence giving, social role, and disaster role, are all positively associated with church response to disaster. The three more structural variables showed no strong associations. It appears that the elements

of congregation structure studied have little effect on organizing disaster response activities, while pre-existing congregation norms are an important determinant.

The second capabilities element, member participation and interaction, is less clearly associated with disaster response. In support of the hypothesis, emergency response is associated with four measures of participation; long-term response is related to one membership measure and to the number of monthly social occasions. Most of these measures are closely a function of membership size, which is a resource element. Using the percent Sunday worship attendance as a participation measure results in a negative association. It appears that the importance of member participation and interaction for disaster response is a function of size, a resource, and not member commitment to worship activities.

The final hypothesis, dealing with congregation resources and disaster response is also supported. All of the resources studied were related to one or both types of congregation response except having small rooms. In most cases the correlations with emergency response are stronger than the correlations with long-term response. This is likely to be a result of the importance of local resources for the response during the emergency period. Long-term response can utilize resources from the outside which have been made available as a result of the disaster.

A major strength of this study over previous studies is that it tests the model using a large number of organizations rather than a few case studies. Statistical inferences about organizational functioning can now be made with much greater confidence than ever before. However, this study also poses new problems. There is some indication that the congregation's resources were most important during the emergency period and less important during the long-term recovery period. While it would be expected that the resources of the local com-

munity are important during the first days when outside aid is not available, what resources are important during the remaining weeks and months? Martin (1976) provides an important part of this answer through his study of the response of a denomination to disaster. Other studies have looked at the functioning of ecumenical disaster relief organizations (Ross and Smith, 1974, and Ross, 1976). The question remaining is "How do all of these elements of the religious community combine to provide an overall church-related disaster recovery effort?" In the future more comprehensive studies will have to be attempted.

NOTES

- 1 Theology 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.
- 2 Community orientation is measured by counting the number of community activities in which the congregation had participated the year preceding the tornado. Alpha = 0.87.
- 3 Spiritual vs. social role 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 so that strongly agree with a spiritual role = 1, agree = 2, undecided = 3, disagree = 4, strongly disagree = 5. Alpha = 0.67.
- 4 Active disaster role is measured by asking whether the church sees its disaster role as directing rather than active. The item is scored strongly agree = 1, agree = 2, undecided = 3, disagree = 4, strongly disagree = 5.
- 5 Particularism is measured by asking whether believing in Jesus Christ, being a member of their particular religious faith, and being knowledgeable of Jesus is absolutely necessary for salvation. The particularism score is created by summing the number of items that are absolutely necessary for salvation. Alpha = 0.55.
- 6 Centralization of the decision-making structure is measured by asking whether policy, programming, financial, and property decisions are made by clergy or laity. The score is calculated by summing the number of decision-areas handled by clergy. Alpha = 0.73.
- 7 Complexity of decision-making structure is measured by the actual number of church decision-making positions and decision-making leaders.
- 8 Emergency recovery activities include the following: provided emergency shelter, provided emergency food, provided emergency clothing, held special worship services, provided care and counseling for individuals, dug out church facilities, located church members, provided money for individuals, provided money for community emergency activities, provided volunteer labor and provided space for emergency organizations. Congregations received a score of 1 for each activity they provided for the community in general. Scores range from 0 to 22 with a median of 10. Alpha = 0.82.
- 9 Long-term recovery activities include the following: provided money to individuals, provided furniture, provided food, provided clothing, provided household items, provided loans, provided volunteer labor, collected special disaster offerings, helped locate employment, helped locate housing, coordinated and/or housed outside work groups, helped individuals in their dealings with relief agencies, provided day care facilities, provided summer camps for youth, provided space for use by relief agencies, provided worship facilities for use by other churches, worked with the Spirit of '74 Committee, worked with problems of the elderly, helped organize the Xenia Thanksgiving Memorial Service and participated in mental health training programs. Congregations receive a score of 1 for each activity they provided for members only and a score of 2 for each activity provided for the community in general. Scores range from 0 to 38 with a median of 8. Alpha = 0.88.
- 10 Throughout this study multiple item scales are used to measure single variables. To provide an indication of the reliability of these indexes Cronbach's alpha, which is the mean of all split-half reliabilities, is presented along with the discussion of each index. For a discussion and computational formula for alpha see Armor, 1974.
Pearson's r is used to measure the association between the congregational variables and disaster response. While some researchers feel that it is permissible to use parametric techniques only with scores that are truly numerical, some recent writers conclude that even though some error in inference may occasionally be made by using nominal or ordinal data with parametric techniques, the increase in power makes the risk seem small (Bohrstedt and Carter, 1971: 131-132). 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 interval, ordinal and dichotomous nominal data. After determining which variables are significantly associated, stepwise regression analysis is used to determine the variables with the greatest independent effects on congregation response.

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