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A CASE STUDY OF DISASTER-RELATED
EMERGENT CITIZEN GROUPS:
AN EXAMINATION OF "VESTED INTERESTS"
AS A GENERATING CONDITION*

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Introduction

The emergence of citizens to form groups for any number of reasons or causes is a salient feature of American society. Previous research verifies the fact that such groups are evidenced in disaster-related situations. In a rather recent "state of the art" publication on disaster response, Quarantelli cites several studies which generate the notion that: "disaster situations tend to be peopled by emergent groups, entities that had no existence prior to the crisis...but their functioning may be crucial to the whole trans- and post-disaster response" (1977: p 31).

Of the earlier studies, attention has been focused extensively upon the description of linkages between social attributes or group members and the influences such attributes have upon emergent citizen group characteristics (Form and Nosow, 1958; Dynes, 1968; Forrest, 1968; Burton, 1969; Parr, 1970). In addition, many studies have investigated the broader contexts of the citizen group in terms of organizational behaviors (Burton, 1969, 1970; Dynes, 1968, 1974; Wolf, 1975). Without doubt, research on disaster events has brought forth the awareness of non-institutional citizen group efforts. But few (if any) studies represent efforts to explain "why" some affected citizens seek group processes to achieve personal objectives while others do not. Quarantelli (forthcoming) asserts that citizens pursuing personal needs as a result of a disaster impact, or perceived future impact, will seek group action with increasing frequency; while Burton (1963:pp 116-117) implies that "the idea that everybody should be organized in advance is utopian." Consequently, given the benefit of the doubt that both scientists are correct in their observations, a portion of the population will perceive their needs and seek solutions through group participation, while others will not. Conceivably, the ability to predict these potential populations should enhance the processes of disaster work at many meaningful levels.

Synthesis of the body of knowledge pertaining to emergent groups strongly suggests that certain characteristics are worthy of attention in the disaster-related situation. The theory of collectivity asserts that during a small community disaster, grouping is often attributed to an aggregate of mutually influenced individual responses to immediate needs which become secondary to institutionalized response organizations in larger scale disasters (Burton, 1969:p 316); however, the processes of organizing, even to the level of institutionalizing, during non-emergency periods (pre- and post-disaster) have not been addressed. Hence, organizing behaviors resulting from perceived or post-disaster impact assessments offer a perspective for preparedness that could amend the notion of the individual response scenario for large or small disasters in future emergency periods.

Organization infers a specific approach to resolve problems, institute change, or accomplish common tasks. Fundamentally, the organization represents a concentration of power entrusted to make decisions in order to achieve these certain purposes (Stinchcombe, 1968:p 154). In the domain of the disaster issue, the analysis of organizations has

been approached from a typological or classification model which characterizes their structures and tasks at different periods in the disaster phenomena (pre-disaster, emergency period, post-disaster). Essentially the typology is displayed in the following four-fold matrix:

		Tasks	
		Regular	Non-Regular
Structure	Old	Type I Established	Type III Extending
	New	Type II Expanding	Type IV Emergent

where (under the conditions of the disaster period):

Type I are disaster organizations, institutions, or agencies conducting formalized tasks.

Type II are formal core organizations which have "planned" adaptive roles (i.e., use of volunteers) predicated or demand-response needs.

Type III are formal organizations which assume non-normative tasks.

Type IV are ad hoc groups formed to achieve perceived or actual unmet needs.

(Dynes, 1974:Ch 6, p 2)

Sociological theories of organization account for much of what is understood about the organizations of Types I, II, and III: their structures, functions, roles, networks, and so forth. However, Type IV organizations have not been well accommodated in disaster research (Quarantelli, 1977:p 32). While lack of research on emergent groups in the pre- and post-disaster situations is generally acknowledged, the overall weaknesses of organizational behavior research during the emergency period is comprehensively illustrated by the statement that: "Type IV groups are difficult to talk about since they have no pre-disaster existence, and when the emergency is over they tend to dissolve" (Dynes, 1974:Ch 7, p 6). Although this statement may be empirically true for emergencies, strong evidence suggests that Type IV disaster-related groups do occur at the pre- and post-disaster stages; but it is probable that they have gone relatively unnoticed in social theoretical studies.

Such a conclusion suggests that there is both a theoretical and methodological need for sociological research on the disaster-related emergent group. Focusing on such groups in the pre- and post-disaster

period as a possible "subculture" (Mileti et al, 1975:p 18)¹ of individuals who share in their priorities of concern, as well as their norm and value structures, provides the opportunity to view the phenomenon from a different perspective. In this regard, the disaster-related emergent citizen group or informal organization can be more identifiable as a localized movement to bring about selectively and perceived needed changes.

A nationwide study of cases involving emergent citizen groups currently in progress at the Disaster Research Center² indicates that pre- and post-disaster groups are predominately change oriented within their community environs. Although change efforts are generally politically focused, some groups are attending to situational changes in the realm of individual/family preparedness or recovery, public awareness in the community, reaction strategies for disasters and so forth. In addition, emergent groups which have been identified in the overall study effort tend to reflect higher socio-economic class structure. Beginning with this preliminary knowledge of the emergent groups, the primary aim of this exploratory study of selected California landslide and earthquake issue emergent groups is to: 1) establish the sample groups as organizational entities; and 2) document the constituency or membership in relation to distinguishing social and socio-psychological (belief structures) factors which in turn, may contribute to a predictive model.

Study Design

To accommodate the intent of the study two analytic stages were performed from distinctively different theoretical areas. The first involved deriving assumptions about organizational components which would permit emergent groups into the schema of the traditional organizational perspective; in other words, a comparative structure of descriptive features that could be assumed to disaggregate bona fide organizations from non-organizations throughout the range of the classification typology which was previously discussed. Second, a set of theoretically-based assumptions addressing the predictive model for group members in pre- and post-disaster groups were utilized. The following two sub-sections present these approaches.

¹Mileti defines "subcultures" as "a complex interconnecting set of meanings, norms, values, organizational arrangements, and technological appurtenances which have emerged in response to repeated threats and impacts."

²National Science Foundation project number CEF-8113191.

A. The 4-C's Descriptive Framework

Quarantelli (1981) suggests that emergent citizen groups in disaster-related situations can be scrutinized in an organizational framework. To facilitate research management, he sets forth a data format which allows for descriptive and content analysis. In application, the framework assumes that groups and organizations share components which can be featured as: 1) Careers, 2) Characteristics, 3) Conditions, and 4) Consequences. The overall notion implies that all groups or organizations have these components, and that these components are valid measures of differentiation between organizational types.

The career of a group or organization basically entails the historic stages and underpinnings of individuals' influences toward the formation of the entity, the composition of the entity, group goal or mission adoption, notable changes of the entity over time, and indicators of formalization.

The characteristics of a group or organization involve the described internal composition, structure, and function of the entity; along with its linkages or networks with other groups or organizations.

The consequences of a group or organization represent the impacts of effects which the group or organization has caused. This includes both intended and unintended results, perceptions of measured success or failure, and the internalized assessment of need for the entity beyond the realization of existing successes or failure in the context of current goals or objectives.

Finally, the conditions of a group or organization reflect its capacity and capability to access, manage, and mobilize resources (economic and non-economic) necessary for the entity's survival. In addition, the conditions include an assessment of the external environment, or perceptions of the group by non-members in terms of recognized respectability, legitimacy, ideology, and need.

B. The "Vested-Interests" Model³

Selected assumptions of the theoretical perspective utilized in this stage of the study were initially considered. Because this study is small in scale and exploratory in nature, the findings will only be considered as possible indicators of the strengths or weaknesses in the theory. The historic foundation for the consideration of the vested interests model in this study stems from previously conducted research

³Since no single, macro-level theory in sociology appears to be relevant for the phenomena under study, a perspective based on social exchange theory (Ekeh, 1974; Simpson, 1972; Turner, 1974) was created. The model is termed "vested interests" (Napier and Maurer, 1978; Napier and Mast, 1981; Napier et al, 1982) because benefits and costs are central to the theory.

in the area of social impact assessments for land-use and water development projects. Essentially, researchers conducting social impact assessments on these topics found a great deal of discrepancy between pre- and post-project studies of attitudes and perceptions. Napier, Carter, and Bryant (1982:p 3) infer from these results that "an unknown position of the psycho-social impact of projects is self-induced and probably unnecessary since some of the expectations will not be realized." They proposed that empirical data be gathered upon the perceptions of the "extent" and "direction" of change resulting from the introduced project in order to verify the inferences of previous research, and to examine the concomitants of the perceptions in relation to socio-demographic influences.

The vested interests assumptions derived for the study of disaster-related emergent citizen groups include: 1) significant changes are introduced in the local social milieu by external forces when a disaster threat is introduced; 2) local people are aware of possible impacts from disasters and assess those impacts on an individual basis; 3) the assessment of impacts differentially affects local people in terms of their decisions of interaction to influence introduced change; and 4) interaction experiences differentially affect individuals and produce variability in terms of perceived outcomes or consequences.

The vested interests model presumes that individuals are reward seeking beings that desire to avert internalizing costs. The model asserts that individuals assess social circumstances in terms of the association of benefits to costs. While most people do not wish to maximize benefits in every situation, they tend to always attempt a favorable benefits-to-costs relationship. The factors used to create the overall benefits-to-costs relationship for each person will be somewhat different given variabilities in value hierarchies.

Values in the hierarchical structure are very important in the assessment of benefits-to-costs relationships because the vested interests model envisions a wide spectrum of possible costs and benefits. Unlike economic assessments of costs and benefits which emphasize the monetary aspects of association, the vested interests model views symbolic or qualitative benefits and costs, such as perceptions of the physical and structured environment. The construct also acknowledges psychosocial benefits and costs associated to such things as personal security and social relationships. In general, several factors must be taken into account when people are making assessments about a specific issue, event, or activity. Personal aspects of economic, social, psychosocial, and symbolic benefits costs are aggregated relative to decision-making within the value structure of the evaluator. From individual to individual and situation to situation, differing priorities of economic versus non-economic factors of decision influences are conjured. Consequently, for any given reasoning, issue groups may tend to be comprised of individuals who probably share certain characteristics; and more importantly, believe that an instituted group will offer the opportunity for benefits or rewards (not necessarily monetary) which the individuals desire. Essential to the predictive model of vested interests is the ability to measure several types of benefits and costs; however, the utility of the model is expressed when the predictors are linked to generic characteristics of the population.

Statement of Research Expectations

It should be noted that while landslide and earthquake related emergency citizen groups in California represent one segment of the phenomena, there are a multitude of other citizen groups throughout the country representing activities in other disaster categories (natural and human-caused) and phases (pre- and post-disaster). Given the uniqueness of this specific variant, it is proper to view this study in more exploratory terms, than as one which exacts hypothesis testing. It is expected, nevertheless, to provide preliminary insights into the sociodemographic characteristics and correlates of vested interests in emergent disaster-related citizen group participants. Since the data is based on only a small sample of groups, from a strict sense it is not generalizable to the society as a whole; but the apparent "subcultures" accessed in the study will offer valuable perceptions of emergent group behavioral patterns.

Methodology

The Study Situation and Sample Description

The initial process of locating disaster-related emergent citizen groups began in the Fall of 1981 at the Disaster Research Center of The Ohio State University. The first step in the process involved an extensive, systematic search of available sources and resources, including research literature, popular literature, state/local disaster officials, elected officials, extension agents, media organizations, disaster organizations, academic institutions, and professional colleagues. Extensive effort was devoted to excluding highly formal or institutionalized disaster organizations from the study sample; and including localized (non-network) informal disaster group structures.

Groups which exhibited the preliminary criteria desired in the study were investigated to a greater extent by area pilot studies conducted by field research teams from the Center. General information provided by the pilot field studies was synthesized, and groups selected for systematic study were identified. Field teams utilizing a structured interview schedule and guide returned to the selected groups and interviewed a cross-section of members, leaders, non-members, agency personnel, elected officials, and the media in an effort to formulate a comprehensive, detailed accounting of the groups. In addition, an extensive amount of documents and testimony was collected from respondents and resource facilities.

The California pilot studies revealed a very small number of earthquake related emergent citizen groups and a much greater number of landslide related emergent citizen groups. For general descriptive purposes, a cursory overview of the groups located and selected for study indicated the following generic qualities: a) all groups were located in somewhat affluent sections of standard metropolitan statistical areas; b) all groups had an active "core" group that was much smaller than the total membership; and c) all groups were generally characterized by contiguous residency.

The groups selected from the California data subset for this study includes two landslide and two earthquake disaster emergent groups. The landslide groups emerged following local disasters (post-disaster groups), while the earthquake groups emergence is not attributed to any previous disaster experience (pre-disaster groups). In terms of the specific disaster agent characteristics, landslides are considered predictive and earthquakes are considered non-predictive.

Data collected by the field teams is presented in the following very general summaries.

1) Landslide Group A

Career

This group emerged following a major landslide which destroyed a great deal of property and displaced a number of families. Residents within the impacted area felt threatened by proposed actions of official agencies responsible for relief and recovery of the damaged area. Key individuals with professional backgrounds assumed leadership roles and garnered support with the notion that solidarity would result in more favorable outcomes. Their goal was to retain their residential area with indifference to the planned actions of the official public agencies carrying out their mandated policies.

Characteristics

The group incorporated and established a variety of committees to do such things as develop resources, access the media, gather information from outside sources on how to strategically implement effective action, and provide direct relief to victims. Individual core members tended to be specialists for each operating committee. Most of the membership was husband and wife teams. However, males tended to provide the leadership, while the women did most of the actual organized work.

Consequences

Although it took years, several public hearings and court actions, the group achieved its goal. During the process members experienced perceived doubts that they would succeed, and many setbacks which they encountered with the processes were considered failures at the time of occurrence. But their final achievement illustrated an effective effort to change public policy in their behalf. At present the group is considered inactive.

Conditions

The chief resources mobilized by the group included: monetary funds (provided within the group), professional expertise (available from the members), volunteer organizational labor (provided mainly by the women in the group), media coverage, and local governmental support. The environment surrounding the issues was hostile, and the group confronted both supporters and opponents of their organized method.

2) Landslide Group B

Career

This group also emerged as a result of extensive landslide damage; and in this case, human life was lost as well as property. The group was essentially created by the media, who during the emergency period interviewed one volunteer worker and inferred that he was the leader and organizer of a group (which had not really organized). The volunteers from the residential area felt somewhat exploited and resented this individual's pseudo leadership, so several of them got together and started a group which formally selected a group leader. Although the initial goal of the group was to provide relief and recovery assistance, the focus changed shortly after the emergency period was over. The new goal adopted by the group was aimed at structural changes in local government services and long-term recovery assistance through direct taxation.

Characteristics

This group has not incorporated, and it relies heavily upon its leaders and core members to represent its interests in the community. It has remained a non-networked entity, loosely organized in structure and function. As with the first case, the membership is mostly husband and wife teams with a mixed leadership and task workforce.

Consequences

This group initially received a great deal of media attention and local support, but its refocus of attention toward taxing measures has created distinct levels of controversy within the group and the community at large. Its failure to achieve passage on a tax measure has resulted in some membership loss, but the core has remained intact.

Conditions

The group's primary resources have been professional expertise provided by members, the media, and volunteer labor from its members. The group has lost most of its media support, but does not envision the need for resources other than what is already available from its members.

3) Earthquake Groups C and D

Career

Both of these groups emerged as a result of neighborhood meetings called by individuals to discuss earthquake preparedness. In both cases, these meetings were fairly well attended and resulted in the agreement of attendees to organize a preparedness movement throughout their residential areas. Both persons who were responsible for these meetings' agenda had expressed personal concerns about the levels of preparedness, awareness, and response potentials in the event of a major earthquake. The goals of both groups were to: 1) make the residents aware of the possible impacts of a major earthquake in their area; 2) educate the residents about

preparedness; and 3) implement some level of community/neighborhood preparedness.

Characteristics

If the groups had any differences, they differed on this level. One group acted as a committee-of-the-whole, carrying out agendized activities as a total unit. Meanwhile, the other group established several committees to perform basically the same tasks as the first group. Both groups had a majority of women members, but males constituted the leaders. Neither group considered incorporation. Both groups have accessed the services of local and national disaster organizations for guidance in their program development.

Consequences

Both groups feel that they have succeeded in making residents aware of what to do in the event of a major earthquake; and they estimate that a majority of the members and residents have taken some preparatory steps. Since the groups have "planned" themselves into the disaster response scenario, they do not expect their groups to dismantle.

Conditions

The groups have basically relied on manpower resources volunteered or requested within the membership; however, they have benefitted considerably from speakers and literature resources provided by outside organizations. Although they have received some media attention, they do not perceive the media as a necessary or particularly valuable resource in their endeavors. Outside observers view these groups as "elite," viable, and feasible activities for community citizenry.

Application of the Vested Interests Model to Landslide and Earthquake Emergent Citizen Groups

Since the vested interests model can be used to explain psychosocial impacts of change for pre-impacts (via perceived benefits and costs) and impacts of change for post-impacts (via experienced benefits and costs), it is particularly appropriate to examine both situations: where impacts of change can be mutually assessed between pre-disaster and post-disaster groups; and longitudinal situations where a particular group is examined for a fixed career period.

The vested interests model infers that individuals who perceive or experience more benefits and internalize fewer costs from a group activity will tend to view participation in the group as being positive. Consequently, the perceived or experienced direction of changes associated with the group activity is a direct function of the benefits and costs associated by the participants. If the benefits are high, then the participants should perceive or express consequences of the group as being more beneficial. If the costs are high, then the participants should perceive or express consequences of the group as being more costly. If the benefits and costs are relatively insignificant or neutralizing, the

participants will tend to hold an ambivalent position concerning the group's consequences.

The magnitude of benefits and costs should also influence how extensive the participants feel about their group's effect on changes. If the participants perceive or express many benefits from the group, it should be reflective of the group's successful contributions to changes in the affected community or area. If the participants perceive or express many costs from the group, it should be reflective of the group's failures to effect changes in the community or area. If there are few benefits and few costs, then the group should be perceived as generating little change in the community or area.

Because the utilitarian perspective that is used to construct the vested interests model depends on an emphasis of benefits and costs, it was essential to include a variety of benefits and costs measures in the specification of the theoretical model created for testing. The measures for benefits and costs were synthesized from data provided in the field survey interviews with groups throughout the country and from social movement studies and literature previously generated.

The direct measures of benefits and costs include the assessment of perceived or experienced benefits and costs differences. This assessment entails an aggregate of perceived consequences associated with the conduct of disaster-related group activities in the community. Although the theory and perspectives of the vested interests model dictate a dichotomous relationship between benefits and costs, an intervening construct particular to social values and normative structure treats benefits and costs as possible correlates. Thus, it may be stated that individuals may perceive benefits (at one extreme) as a result of highly positive consequences of change with possibly some negative consequences associated; or they may perceive benefits as a result of no negative consequences with possibly some positive consequences associated. For example, if a group initiates a program to educate the public about a specific problem and in the process divides the community into opposing factions, the following individual perceptions may result:

- Individual A perceives the level of success in the educational program and does not recognize the relationship with community conflict; thus, high benefits are perceived.

- Individual B perceives both issues; thus, perceptions of benefits and costs are comprised or influenced positively or negatively.

- Individual C perceives the level of conflict created in the community and does not recognize the relationship with the educational program; thus, high costs are perceived.

In converse, the extremes relating to a perceived costs model state that individuals may perceive costs (at one extreme) as a result of highly negative consequences of change with possibly some positive consequences associated; or they may perceive costs as a result of no positive consequences with possibly little negative consequences associated.

Table 1: Summary Descriptive Statistics for Study Sample (N=34)

Characteristic		Sample Data
Sex	Percent Male	70.6%
	Percent Female	29.4%
Age	Mean	49.2
	Standard Deviation	14.1
Education in Years Completed	Mean	16.1
	Standard Deviation	3.2
Income for Total Family	\$0 - \$ 4,999	2.9%
	\$ 5,000-\$ 9,999	0.0%
	\$10,000-\$14,999	5.9%
	\$15,000-\$19,999	5.9%
	\$20,000-\$24,999	8.8%
	\$25,000-\$29,999	17.6%
	\$30,000-\$34,999	8.8%
	\$35,000-\$39,999	8.8%
	over \$40,000	41.2%
Number of Children at Home	Mean	0.8
	Standard Deviation	1.2
Length of Residence in Years	Mean	16.0
	Standard Deviation	10.9
Home Ownership	Yes	91.2%
	No	8.8%
Previous Disaster Victim	Yes	41.2%
	No	58.8%

Thus, as an independent factor for the vested interests perspective, given the strong suspicion that pre- and post-disaster emergent citizen groups tend to be of the higher socio-economic order; the assessment of empirical data gathered for examination from the "vested interests" perspective, should reflect that perceived benefits (over costs) for group participation are inferred as a condition for individuals to reduce personal risks or recover personal investments.

The Study Sample

The groups included within the scope of this study as discussed on pages 6 - 9 constitute disaster-related emergent citizen groups within the definitional parameters of the Disaster Research Center's design for the National Science Foundation project number CEF-8113191. The descriptions of these groups that were given are illustrations of fairly typical cases located throughout the United States within the past ten months. Since it was the intent of this paper to explore the characteristics and reasons of group participation, only group members were used in the study sample. Of the four groups, the field teams interviewed or contacted a total of 63 classified group members. In June of 1982, survey instruments were sent to 63 respondents. The questionnaire was designed to be self administered and completed by an adult member of the household having membership in the group. A follow-up was conducted approximately ten days after the original mailing. The total rate of response to the questionnaire was 54%, or a total number of 34 respondents.

The socio-demographic characteristics of the sample are reported in Table 1. It shows that the respondents were primarily male (70.6%), middle aged (49.2 years old), and well educated (16.1 years of schooling). Over 41% of the respondents reported total family incomes in excess of \$40,000. The family units were relatively small with a reported average number of children living at home at .8. Over 91% of the respondents owned their homes, and over 41% were previous disaster victims.

Operationalization of the Study Variables

The independent variables selected to measure perceived or experienced direct benefits and costs is the consequential differences scale compiled from 16 items concerning positive and negative consequences of citizens group activities experienced. The respondents were asked about: educating the public, generation of problem solutions, alerting public officials to specific problems, increasing political participation in the community, increasing community interest, improving governmental accountability, community integration impacts, provision of feelings of safety or concern, generating conflict situations, wasting time of public officials, deceptive practices, distractive practices, radicalism and discontent, allocation of power in the community, misrepresentation, and community fragmentation. All items were measured on a scale of 1 to 5 with 1 representing consequences "not apparent," and 5 representing consequences "overwhelmingly apparent." To construct the consequential difference scale, the negative items were rescored in reverse order, summed, and subtracted from the sum of the positive consequences items. The following matrix illustrates this construct:⁴

$$\begin{array}{ccc} \text{Consequential Differences for Direct Impacts} = & & \\ \begin{array}{c} \text{(items 1-16)} \\ \text{No Apparent Negative} \\ \text{Consequences} \\ + \\ \text{Overwhelmingly Apparent} \\ \text{Positive Consequences} \\ \hline \text{Benefits} \end{array} & - & \begin{array}{c} \text{(items 1-16)} \\ \text{No Apparent Positive} \\ \text{Consequences} \\ + \\ \text{Overwhelmingly Apparent} \\ \text{Consequences} \\ \hline \text{Costs} \end{array} \end{array}$$

The socio-demographic factors selected for examination were: sex, age, education, place of early socialization, length of residence, income, occupation, and previous disaster victim experience.

Sex was measured by asking the respondent to indicate his/her sex. Males received a value of 1 and females a value of 2.

Age was measured as the age of the respondent at last birthday.

Education was measured as the number of years of formal education the respondent had completed at the time of the study.

Place of Early Socialization was measured by asking the respondent where he/she spent the first 15 years of life. The possible responses to the question were: rural farm, rural nonfarm, small town (under 2,500), town (2,500 - 10,000 people), and city (10,000 or more people). The

⁴See discussion on pages 10 and 11.

responses were weighted 1 through 5 with 1 representing "rural farm" and 5 representing "city."

Length of residence was measured by asking the respondent how many years he/she had lived in the study community.

Income was measured by asking the respondent to check 1 of 9 categories of total family income. The responses were weighted 0 through 8, with \$5,000 increments up to \$39,999, and a final response item indicating "over \$40,000."

Occupation was measured by asking the respondent to describe the occupation of the primary wage earner at the place of residence. Occupations were coded on a scale of 1 through 15 based on common categories employed in the U.S. "Standard Industrial Codes" index. One was equal to the highest occupational status positions (professionals) and 15 was equal to "other" categories of occupations (not common enough for classification/codification).

Previous disaster victim experience was measured by asking the respondents if they or their family had ever been disaster victims. For this dummy variable, 0 represented a "no" response while 1 represented a "yes" response.

The selected dependent variables of the study included "extent of community change impact scale," and "direction of community change impact scale."

The "extent of community change impact scale" variable was operationalized by asking the respondents to circle numbers along a series of scales which measure the extent of change they perceived had occurred in selected components of the community since the emergence of their group. The question for each aspect of the evaluation stated: "To what extent has (issue being assessed) changed within your area of residence since the disaster-related group was formed?" Examples of each issue being assessed were presented in parentheses after each question. An equal interval scale with scores ranging from 0 to 10 was provided after each question and the respondent was instructed to circle the number that best represented their feelings. The 0 value represented no change while 10 represented great change.

Six different aspects of the community were assessed. The components examined included: community relationships, community emergency services, conformity to laws, feeling of safety, problem awareness, and preparedness or mitigation measures. The responses to the six questions were submitted to item analysis for the purpose of building a composite index to facilitate statistical analyses. The six item index had an Alpha of 0.81 which is quite acceptable in social science research.

The composite index for the "extent of community change impact scale" was calculated by summing for the weighting values for the items comprising the index. Missing data were given the variable mean and retained for further analyses. The index scores were used in the statistical analyses to test the theoretical perspectives. The descriptive statistics are provided in Table 2.

Table 2: Descriptive Statistics* and Alpha Reliability Coefficients for Responses to the Extent of Community Change Impact Scale (N=34)

Extent of Change In:	Possible Responses												Mean	S.D.	Missing Data
	No Change	Great Change													
		0	1	2	3	4	5	6	7	8	9	10			
1. Community Relationships	8.8 (3)	5.9 (2)	5.9 (2)	8.8 (3)	11.8 (4)	17.6 (6)	8.8 (3)	2.9 (1)	2.9 (1)	17.6 (6)	8.8 (3)	5.5	3.3	8.8 (3)	
2. Community Emergency Services	26.5 (9)	2.9 (1)	8.8 (3)	8.8 (3)	0.0 (0)	5.9 (2)	5.9 (2)	17.6 (6)	5.9 (2)	2.9 (1)	5.9 (2)	4.0	3.5	8.8 (3)	
3. Conformity to Laws	32.4 (11)	5.9 (2)	5.9 (2)	20.6 (7)	0.0 (0)	5.9 (2)	5.9 (2)	5.9 (2)	2.9 (1)	2.9 (1)	2.9 (1)	2.9	3.0	8.8 (3)	
4. Feeling of Safety	5.9 (2)	5.9 (2)	11.8 (4)	5.9 (2)	5.9 (2)	14.7 (5)	0.0 (0)	20.6 (7)	2.9 (1)	2.9 (1)	14.7 (5)	5.3	3.2	8.8 (3)	
5. Problem Awareness	2.9 (1)	11.8 (4)	5.9 (2)	5.9 (2)	5.9 (2)	14.7 (5)	0.0 (0)	14.7 (5)	8.8 (3)	11.8 (4)	8.8 (3)	5.6	3.1	8.8 (3)	
6. Preparedness Mitigation Measures	11.8 (4)	2.9 (1)	2.9 (1)	8.8 (3)	5.9 (2)	20.6 (7)	2.9 (1)	14.7 (5)	5.9 (2)	5.9 (2)	8.8 (3)	5.2	3.1	8.8 (3)	
Standardized Item Alpha for Scale Reliability = 0.81 Mean Scale Score = 28.4 Standard Deviation = 13.2															

*The data are presented as percentages with frequencies contained within the parentheses. The percentages may not sum to 100.0% due to rounding error.

After the respondents had evaluated the extent of community change for a particular component of the affected community, they were immediately asked to assess the "direction of the community change" being evaluated. Each respondent was asked the following question: "Do you believe the changes noted in (issue being assessed) have been beneficial to the community (positive effects) or costly (negative effects)?" The possible responses ranged from -5 to +5 with -5 representing very costly and +5 representing very beneficial. A 0 value represented a "neither costly nor beneficial" response. The same issues evaluated in the "extent of community change impacts scale" were evaluated in the "direction of community change impact scale."

The response to the direction of change items were rescored using a range of possible scores of 1 to 11. A -5 score (very costly) received a value of 1 while a +5 score (very beneficial) received a value of 11. A standardized item alpha was calculated to determine the reliability of the index.

The item analysis produced an Alpha of 0.71 which is acceptable in social science research. All six of the items comprising the original index were retained in the scale. The weighting values were summed to form a composite index and these data were used in subsequent statistical analyses. The descriptive statistics for the "direction of community change impact scale" are provided in Table 3.

Table 3: Descriptive Statistics* and Alpha Reliability Coefficient for Responses to Direction of Change Impact Scale (N=34)

Direction of Community Change In:	Possible Responses											Mean	S.D.	Missing Data
	Very Costly	Somewhat Costly	Little Cost	Neither Costly Nor Beneficial	Very Little Benefit	Somewhat Beneficial	Very Beneficial							
Weighting Values	-5	-4	-3	-2	-1	0	+1	+2	+3	+4	+5			
	0	1	2	3	4	5	6	7	8	9	10			
1. Community Relationships	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	2.9 (1)	11.8 (4)	14.7 (5)	5.9 (2)	20.6 (7)	8.8 (3)	26.5 (9)	7.8	1.9	8.8 (3)
2. Community Emergency Services	0.0 (0)	0.0 (0)	2.9 (1)	0.0 (0)	2.9 (1)	23.5 (8)	20.6 (7)	2.9 (1)	8.8 (3)	8.8 (3)	20.6 (7)	6.9	2.2	8.8 (3)
3. Conformity to Laws	5.9 (2)	0.0 (0)	0.0 (0)	0.0 (0)	2.9 (1)	41.2 (14)	17.6 (6)	2.9 (1)	14.7 (5)	0.0 (0)	5.9 (2)	5.7	2.2	8.8 (3)
4. Feeling of Safety	0.0 (0)	0.0 (0)	2.9 (1)	2.9 (1)	5.9 (2)	11.8 (4)	14.7 (5)	5.9 (2)	29.4 (10)	2.9 (1)	14.7 (5)	6.9	2.2	8.8 (3)
5. Problem Awareness	2.9 (1)	0.0 (0)	0.0 (0)	2.9 (1)	2.9 (1)	11.8 (4)	5.9 (2)	5.9 (2)	32.4 (11)	14.7 (5)	8.8 (3)	7.2	2.3	8.8 (3)
6. Preparedness or Mitigation Measures	0.0 (0)	0.0 (0)	0.0 (0)	2.9 (1)	0.0 (0)	14.7 (5)	17.6 (6)	14.7 (5)	17.6 (6)	5.9 (2)	17.6 (6)	7.3	1.9	8.8 (3)
Standard Item Alpha for Scale Reliability = 0.71 Mean Scale Score = 41.9 Standard Deviation = 7.7														

*The data are presented as percentages with frequencies contained within the parentheses. The percentages may not sum to 100% due to rounding error.

Findings

Descriptive Findings

The descriptive data presented in Table 2 demonstrate that the perceived extent of community change influenced by the groups varied from "little change" to "notable change" depending on the issue being assessed. Of note, however, is that none of the issues evaluated on the scale were perceived as being "greatly changed." Community relationships, problem awareness, feeling of safety, and preparedness or mitigation measures were perceived to be "notably changed," while conformity to laws and community emergency services were perceived to be "less changed."⁵

Data in Table 3 shows that the perceived direction of community change influenced by the groups also varied by the issue being evaluated, yet, all issues of change were perceived to be beneficial. The changes observed in community relationships indicated the greatest perceived level of benefits, while conformity to laws indicated the lowest perceived level of benefits among the issues.

In sum, the descriptive data indicated that some extent of change was perceived to have occurred in the community, but that "great change" was not perceived to have occurred on any of the issues examined. The data for the direction of change indicated that groups perceived some positive consequences (benefits) associated with the changes they influenced.

Overall, the descriptive findings revealed that the extent of change influenced by the groups was "little" to "notable," and that the direction of the change was "moderately positive."⁶

Correlational Findings

Correlational analyses were used to enable a better understanding of composition of group members with the highest probability of perceiving benefits from participation in the emergent group activity. The correlation matrix is presented in Table 4.

⁵ Items in quotes indicate the categorical response terms presented in the survey.

⁶ Ibid.

Table 4: Correlation Matrix for Attitudes Toward the Extent and Direction of Community Change Impacts (N=34)

	Extent of Change	Direction of Change	Consequential Differences	Sex	Age	Educ.	Early Soc.	Length Residence	Home Owner	Prev. Victim	Income	Occupation
Extent of Change	1.00											
Direction of Change	0.99	1.00										
Consequential Differences	-0.33	-0.33	1.00									
Sex	0.02*	0.05*	0.06	1.00								
Age	0.13	0.15	-0.08	0.13	1.00							
Education	-0.31	-0.33	-0.05*	-0.20	-0.19	1.00						
Early Socialization	-0.12	-0.10	-0.09	-0.03*	0.03*	0.27	1.00					
Length of Residence	-0.02*	-0.01*	0.07	-0.10	0.52	-0.20	0.04*	1.00				
Home Ownership	-0.11	-0.11	0.01*	0.03*	0.14	-0.01*	-0.20	0.26	1.00			
Prev. Disaster Victim	-0.18	-0.18	-0.10	-0.12	0.03*	0.14	-0.01*	-0.28	0.15	1.00		
Income	-0.56	-0.60	0.10	-0.14	-0.03*	0.33	-0.18	0.01*	-0.28	0.15	1.00	
Occupation	0.18	0.20	0.09	0.07	0.39	-0.29	-0.13	-0.07	0.06	-0.01*	-0.24	1.00

*Not significant at the .05 level.

As could possibly be expected from the small study sample, Table 4 shows a very high intercorrelation between the dependent variables and the relationship between the two dependent variables, and the independent variables are nearly identical. Therefore, further analyses will only explore the relationships between the "extent of community change" dependent variable and the independent factors.

The correlation matrix reveals that eight of the 10 independent variables were significantly correlated with the extent of community change factor at the .05 level. The eight variables shown to be significantly related are: consequential differences, age, education, place of early socialization, home ownership, previous disaster victim experience, and occupation. The relationships indicate that as perceived benefits decrease, the perceived extent of community change that is influenced by the group also decreases. In addition, people who own homes, have higher education, higher occupational status, non-farm backgrounds, disaster victim experience, and are older will generally perceive greater benefits of participation in the disaster-related group; and therefore, have a higher probability or propensity to become involved in an emergent group activity when the perceived need arises.

Regression Findings

Step-wise regression analysis was conducted on the data set to determine the relative explanatory power of the independent variables when all of them were considered simultaneously. The variances in the "extent of community change" index scores were regressed against the 10 independent variables for the purpose of building the best explanatory model.

The regression findings for the "extent of community change" scale are presented in Table 5. Three variables were shown to be significant in reducing the unexplained variance in the dependent variable. The three variables model explained 41.1% of the variance in the "extent of community change" impact variable. The best regression model is presented in standardized, partial regression coefficient form:

$$y = -0,614x_1 - 0,278x_2 - 0.266x_3 + e$$

where: y = Extent of Community Change Impact Score

x_1 = Income

x_2 = Home Ownership

x_3 = Consequential Differences

Table 5: Step-Wise Regression Analysis for Extent of Community Change Impact Scale (N=34)

Step Number	Income	Home Owner	Conseq. Differ.	Early Soc.	Sex	Prev. Victim	Occupation	Length of Residence	Adj. Co-efficient of Determination	F-Ratio of Enter Variable
Step 1	-0.563	--	--	--	--	--	--	--	0.296	14.9
Step 2	-0.645	-0.290	--	--	--	--	--	--	0.356	4.0
Step 3	-0.614	-0.278	-0.266	--	--	--	--	--	0.411	3.9
Step 4	-0.638	-0.241	-0.282	-0.202	--	--	--	--	0.434	2.2*
Step 5	-0.646	-0.241	-0.278	-0.205	-0.053	--	--	--	0.417	0.2*
Step 6	-0.632	-0.222	-0.286	-0.208	-0.058	-0.058	--	--	0.399	0.2*
Step 7	-0.618	-0.221	-0.291	-0.199	-0.059	-0.060	-0.051	--	0.379	0.1*
Step 8	-0.619	-0.227	-0.289	-0.197	-0.064	-0.067	-0.048	-0.038	0.356	0.1*

*Not significant at the .05 level.

Conclusions and Implications

This paper has examined some of the factors and processes associated with the emergence of disaster-related citizen group participation in a California setting. Data, both quantitative and qualitative, has been presented from four groups concerned about natural disasters in their communities. In addition, these groups represent different situational characteristics (pre- and post-disaster, and location within the state).

The findings of the study support the vested interests model as it was developed for this study. The direct measure of benefits to costs (consequential differences) was shown to be significant in the regression analysis in reducing the unexplained variance for both dependent variables. Although it did not explain as much of the variance as the indirect measures of income and home ownership, it did contribute to the overall explanatory power of the regression model as it was intended to do in the theoretical assumptions.

Overall, the study reveals that individuals with higher socioeconomic status (income, home ownership) perceive personal benefits associated with group participation in order to affect some kind of positive community-related change. In addition, the correlational analyses characterize the higher propensities for emergent citizen group participation with increasing age, higher educational/occupational status, previous disaster experience, and nonfarm early socialization.

These findings indicate that value judgments associated with the assessments of the consequences of group-induced community change are strongly influenced by factors inherent in the disaster threatened population; and, secondarily, by the perceived benefits and costs of direct impacts. Such findings strongly suggest that agencies and organizations working in the disaster environment should adopt appropriate strategies for all stages of disaster work (i.e.: planning, preparedness, relief, and recovery) to accommodate the characteristics of the population within a community, and to maximize efficiencies in their utilization of resources. The areas in which group participants feel their groups have had the most positive impact include: educating the public about specific problems, making public officials aware of specific problems, and bringing people of different perspective together to solve common problems. The perceived costs of such efforts were noted much less frequently.

The implications of this exploratory study for future research are many. This study should be replicated in the broader disaster-related emergent citizen group experience to determine its generalizability for the phenomenon.

In addition, further work needs to be conducted on the refinement of the measurement model to draw the empirical processes definitively closer to the theoretical propositions. For example, the high correlation between the extent and direction of perceived direct changes in the community suggests that the feature of perceived impacts is not affected by covariance, and should be theoretically aggregated. Secondly, the

findings indicate a probable assumption related to social exchange theory which basically states that individuals will engage in activities in relation to their ability to invest, as well as their perceptions of benefits and rewards of the activity. Given the fact that socioeconomic factors were significantly important in the explanation of variance in this study, a test for the capacity/willingness of investments by participants and nonparticipants would contribute to the knowledge of why some people participate in the disaster-related citizen group and others do not.

A strong predictive model generated by social science research on the disaster-related citizen group phenomenon should aid in the decision-making processes at several levels of the public service domain. It is possible that further research along the lines introduced in this study will provide the means of accomplishing this objective.

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