TRUST AND POLICYMAKING LEGITIMACY:

EMPIRICAL SUPPORT FOR A

PRESCRIPTIVE MODEL

By

DAVID EHM ALLEN

Associate of Science
Connors State College
Warner, OK
1987

Bachelor of Science
Northeastern State University
Tahlequah, OK
1989

Submitted to the Faculty of the
Graduate College of the
Oklahoma State University
in partial fulfillment for
the Degree of
MASTER OF SCIENCE
December, 1999

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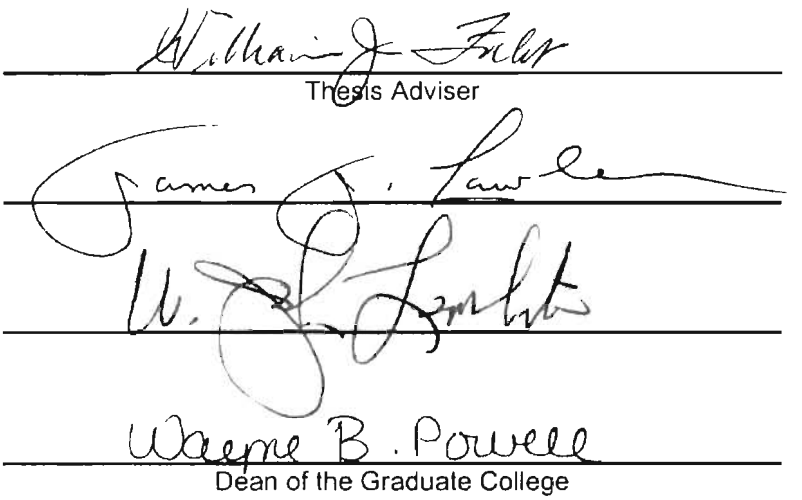
Thesis Approved:



Thesis Adviser

Dean of the Graduate College

ACKNOWLEDGMENTS

I thank my committee members, Dr. Will Focht, Dr. James Lawler, and Dr. John Lamberton of Oklahoma State University for their help and guidance through my graduate coursework and research. I would also like to thank Dr. Carl Spencer, Mr. Paul Shuler, and Mr. Art Porter of Oklahoma State University – Okmulgee for their critical review of my thesis drafts. I also appreciate my research partner, John Wood, for his assistance with the project. Thanks are also in order for the participants who were willing to give several hours of their time to this project.

Thanks are also extended to the inter-library loan staffs at Northeastern State University, Tahlequah, OK and Oklahoma State University – Okmulgee. The National Science Foundation is thanked for the grant money to fund this research.

I wish to thank my parents, Joe and Kathleen Allen, for their support and encouragement. A very special thanks goes to my wife, Janet, and my children, Rachel and Glenn, for their understanding and patience as they supported me throughout this project.

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CHAPTER I

INTRODUCTION

The purpose of this investigation is to test a prescriptive model for trust and legitimacy in policymaking (Focht 1995), particularly in regards to the Illinois River Basin (IRB) in Northeastern Oklahoma. Four major assumptions are inherent in this study:

- Stakeholders do not necessarily agree on the impacts that may be occurring to the IRB;
- Stakeholders do not necessarily agree on the severity of the impacts to the IRB;
- Stakeholders do not necessarily agree on how IRB impacts should be managed;
- Stakeholders do not necessarily agree on who should manage IRB impacts.

The evaluation of the model focuses on the question: "How can IRB management policy be made legitimate?" and three subordinate, but important, research questions:

1. How should impact management policy be formulated?
2. How does the participants' trust of government officials, non-government experts, and fellow stakeholders differ?
3. How does trust influence participants' preference for impact management policy?

Answering these questions requires attention to several considerations:

1. Policy agenda (what impacts and what values should be considered?);
2. Policy maker (who should make IRB management decisions?);
3. Policy making process (how should these decisions be made?);
4. Policy output (what should the policy be?); and
5. Policy outcome (what effects should the policy produce in the long term?).

The model being tested is composed of three decision context dimensions:

1. Relative salience of objective facts and subjective values as decision criteria, coupled with the relative trust of technical experts (if facts dominate) or of stakeholders (if values dominate);

2. Relative degree of social controversy on a preferred course of action (policy output and outcome);
3. Relative trust of government as the policy formulator and implementer.

The importance of this study is that with the use of a valid model, legitimate policies can be developed that will be effective and efficient. As the governmental policies gain this legitimacy and trust, deference to the government for environmental policy decisions will increase, allowing for still further effectiveness and efficiency, in both time and capital.

CHAPTER II

REVIEW OF SOCIAL TRUST LITERATURE

What is trust? How does trust relate to the bureaucratic process? What part does trust play in public participation? Various conceptions of trust and how trust relates to the bureaucratic process exist. Also associated with the bureaucratic process is trust and public participation in deliberations of risk policy. The topic gleaned from these two statements is concerned with building public trust and thus building acceptance of bureaucratic policies. If trust is found within the government, deference will be granted to its authority and the decision-making process will be given legitimacy. In the present situation, decisions once deferred to officials become the focus of intense public conflict because of increasing distrust of governing institutions. The trend toward distrust started in the 1960s and has expressed itself in the form of decreased voter turnout, a feeling of alienation expressed as less interest to participate in politics, and an increase in interest group activity proportional to the decrease in confidence in the elites (Laird 1989). It is obvious that without trust, the process of government is made much more difficult as political authority is damaged.

Various studies of trust have produced models with as few as two dimensions and as many as five. Barber's (1983) model has two dimensions: technical competence and fiduciary obligations. Renn and Levine's (1991) five dimensions include perceived confidence, objectivity, fairness, consistency and faith. Two lines of thought run through the literature on trust. One is that trust is a construct based on expected competence and reciprocity. This is the instrumental or rational trust perspective. A group identity is found within the second perspective. Here the value set of a group is the focus of social interaction in a relational form of trust. The makeup of these two forms of trust will be explored in detail.

Instrumental or Rational Trust

The instrumental version of trust has four basic dimensions: trust as rational confidence; trust as fiduciary responsibility; trust as risk acceptance; and trust as a cognitive coping strategy (Bradbury, Branch, and Focht 1999).

Trust as rational confidence

"Trust as rational confidence" entails some often-implied concepts of what constitutes confidence. However, these concepts, in the author's opinion, are not necessarily valid. The term confidence is often used in place of trust. The term "confidence" actually denotes a relationship of trust that has lasted over time (Renn and Levine 1991) and is therefore often misused.

For trust to be viewed as rational confidence, the policies generated from bureaucracies must be effective and efficient. In order for these rational decisions to be made efficiently, public interference must be eliminated or reduced. Methods of dealing with public interference can be accomplished via deference to governmental agencies in areas of competence and discretion. Also, a judgement of competence on the part of these bureaucracies must be made. Several studies support this view, including those by Barber (1983), Kasperson (1986), Renn and Levine (1991), and Kasperson, Golding, and Tuler (1992). These all include competence as a dimension of trust. This view of competence also has support in a study by Covello (1992) who employs the dimension of competence in conjunction with expertise. Peters, Covello, and McCallum (1997) add knowledge and expertise as a dimension of trust.

Several other aspects of trust as rational confidence, although not as demanding as competence, are none-the-less important. Kasperson (1986) conveys that institutions must be regarded as unbiased if they are to be viewed credible and trustworthy. Renn and Levine (1991) also imply this in their use of neutrality as a structural element of trust. In their use of the term "objectivity," Renn and Levine (1991) voice agreement of being unbiased as a dimension of trust. Kasperson, Golding, and Tuler (1992) add commitment as a dimension. Commitment can be demonstrated in that extra effort required to ensure those most affected by the decisions (who

also tend to be the least active in the decision process) have their concerns addressed. "Honest and Openness" form the basis of a trust dimension included in the works of Covello (1992) and Peters, Covello, and McCallum (1997). This dimension comes from actions and verbal and nonverbal clues. Included is any act of disclosure of risk management: the higher the level of disclosure, the higher the corresponding judgment of trust and credibility.

Trust as fiduciary responsibility

Sharing values is an important step in the legitimization of government. Some studies show that the government must adopt or share the values of the public. Where sharing of values occurs, the public's interests are viewed more important than the government's, resulting in the government's pursuit of the public's best interest.

Barber (1983) has proposed a "fiduciary responsibility" dimension of trust. The commitment aspect of Kasperson, Golding and Tuler (1992) support this concept as well. The institution should be sensitive to the social structure of the participants. How institutions perform affects trust. As long as the peoples' expectations of the relationship, such as confidence or faith, are not violated, distrust will not be made evident. Covello (1992) adds "dedication and commitment" as one of social trust's fiduciary responsibilities. This responsibility can be expressed by perceptions of hard work and availability, such as being able to be reached after hours or giving a home telephone number.

Kramer and Tyler (1996) assert that people tend to feel a moral obligation to assist others. This obligation alludes to a fiduciary mindset even though it is often decided rationally, based on perceptions of how others will reciprocate. Kasperson (1986) comments that, when people lose trust in the agency, they will judge that the agency does not care about them, thus caring is added as an attribute of trust. Caring as a dimension of trust is clearly spelled out later in the work of Kasperson, Golding, and Tuler (1992). Covello (1992) also adds caring and empathy to his list of trust dimensions, noting that the personal perception of "caring and empathy" is the most important dimension. Peters, Covello, and McCallum (1997) also add to the trust dimension list in the form of "concern and care."

Renn and Levine (1991) incorporate the word "faith" as one of their five trust dimensions that must be present. They also interject that faith is one of the structural elements of trust. Lewis and Weigert (1985) state that motivation of trust can be emotional, such as a strong positive affect for the object.

Trust as risk acceptance

Risk acceptance involves a voluntary choice to assume any risks inherent in a trusting situation. In order for this to be a trusting relationship, there must be the possibility of unpleasant consequences. In the case of multiple risks, how any one risk is compared to other risks depends on how directly threatened an individual is by the particular risks (Mitchell 1992). The decision to trust or not, that is accept or not accept the innate risk, is an individual one – based on a personal evaluation of the risk involved. This decision has an origin in familiarity and confidence with regard to all aspects of the particular situation. An example would be a comparison of fears we accept, such as those associated with nuclear medicine, versus those we avoid, such as a nuclear power plant (Slovic 1993). This example demonstrates the importance of trust. We trust the medical industry, but not the nuclear power industry, primarily due to perceived competence in the medical profession and from the media reports of nuclear power plant accidents. All decisions in life incorporate an unavoidable aspect of risk. Trust is given at one's own risk; without trust, one can avoid risk. Any advantages that would have been, disappear (Luhmann 1988).

Earle and Cvetkovich (1995) describe how looking backward to control future events will achieve only a limited number of goals. With an uncertain future, old information will result in increased disappointment. Shapiro (1987) states that institutional agencies can bridge relevant past events to future possibilities with resources at hand. The focus here is the utilization of relevant past events instead of reliance on them. According to Earle and Cvetkovich (1995), trust is involved in a decision between alternate futures. These decisions may cost today, but the future benefits are worth it. The hope is not to replicate the past, but create a useful future created through independence from past events. Independence allows one to exhibit some

control over the future. Kasperson, Golding, and Tuler (1992) also note that trust has an orientation toward the future with a component of taking risks. Lewis and Weigert (1985) comment that information on possible risk is processed to determine whether certain futures are highly probable or too remote to consider. Shapiro (1987) also asserts that some agencies focus on the future contingencies of trust, realizing that the future is risky and uncertain. This is mandatory, according to Earle and Cvetkovich (1997), who state that if there is no risk, trust does not exist.

Trust as cognitive coping strategy

If a decision context is undemanding or has an air of familiarity, the decision process quickly fabricates a satisfactory answer. As more complex and uncertain situations arise, the ability to rationalize the outcomes and make a quick decision is compromised. Cognitive coping strategies reduce this complexity into a simpler context on which a reasonable decision can be made.

Lewis and Weigert (1985) discuss a cognitive motivation for trust. Trust in this instance functions as an alternative for reduction of complexity. Cognitive processes distinguish entities that are trustworthy, distrusted, and unknown. This process involves at least some aspect of familiarity. If absolute ignorance exists, we can gamble but have no reason to trust.

Wynne (1996) addresses the dichotomies imposed on modern environmental issues. Lay people have assumed trustworthiness and competence in experts. What happens when experts disagree or multiple alternatives are proposed? This added complication could suppress progress, therefore a decision based on trust can reduce the complexity inherent in this situation.

Earle and Cvetkovich (1995) extensively discussed cognitive coping strategy as it relates to trust. Social trust evolved as a tool to reduce cognitive complexity induced from increasing societal complexity. Included is thinking, judging, problem solving, decision-making, etc. Trust offers two types of benefits. It reduces cognitive complexity while allowing the person to move from a disturbed state to a steady state. With our limited cognitive capacity, we tend to move the complex toward the simple. In a simplified form, we can find meaning, which will allow us to stop dwelling on the state of affairs. The cognitive limits of people require judgements to be efficient.

The general social context of social trust has two lines of cognitive complexity reduction. The first is a "social focus." This concept is like a continuum with the selfish entity at one extreme and the total community member at the other. How the person thinks about his/herself at a given time determines where they fit on this continuum. The fit is constantly changing as the cognitive simplifying strategy changes, producing the desired benefits. The second line of reduction is the "resources" required. This continuum represents high levels of resources at one end with the other end having low levels of resources. The amount of resources available will fall somewhere on this dimension, dictating what simplification strategies are physically and financially available. Structure for the future is now possible by selecting a strategy based on these two continuums. The structure will reduce cognitive complexity because a general idea of the future is visible and, therefore, more certain.

Relational Trust

Three components to the relational aspect of trust are evident: trust as shared values; trust as social cohesion; and trust as procedural justice (Bradbury, Branch, and Focht 1999).

Trust as shared values

Kramer and Tyler (1996) allude to a relationship between social trust and shared values. Social relationships, with a degree of closeness (belonging to the same group), generate trust. Trust is only important in a social setting. In order to accept the decisions of others, their trustworthiness must be evaluated. Group membership, a process where one can identify with others having similar values, will result in a collective trust that the members will want to cultivate. Other concerns regard the shared moral values with those in authority. These are concerned about judgments of right and wrong and the implications of dealing with authoritarian figures.

Earle and Cvetkovich (1995) take a stand similar to Kramer and Tyler (1996). The term they use is "cosmopolitan trust," which may include a wide range of communities with various value sets. These are assimilated and all the members of the cosmopolitan society are on equal ground in sharing their individual values with the whole. This situation does open the door to risk,

enhancing the need to trust. Cosmopolitan trust looks toward the unfamiliar and takes on anything different for evaluation, which works well for emerging groups. Cosmopolitan trust is based on multiples, so its members have no need to argue. Cosmopolitan trust can be more demanding and may exemplify the need for cosmopolitan social trust-based leadership. A good example of a model cosmopolitan society is found in science. Here, the membership is not embroiled in the past, but is open to whatever the future may hold.

Trust as social cohesion

Cooperation in any complex society is only possible when its members trust each other. Common relationships between parties within the society may provide the incentive (Shapiro 1987). With this trust, interaction transaction costs are decreased by reducing the need to research and evaluate the other entity when there is a lag time between exchanges. As far as government is concerned with trust as social cohesion, any policy will be more readily accepted when it has been presented fairly and public consent is given.

Kramer and Tyler (1996) discuss that competition can be reduced if the factions involved can identify themselves with a particular group. Evolution of these groups reduces the risk of "free riders" and will facilitate a trusting behavior more rapidly. From a rational perspective, this type of trust will continue as long as a prospect of future cooperation is present.

Misztal (1996) proposed three dimensions of trust that focus back on the social cohesion role of trust. These are "Trust as Habitus," "Trust as Passion," and "Trust as Policy." "Trust as Habitus" looks to habits being an attribute of a person's routine. These habits function as a method to pattern our daily lives. As a result, we need not focus on all of life's activities and thus social complexity is reduced. With this reduction, habits can be seen in a light similar to that of trust. Trust is more easily granted to those like ourselves because we are more adept at predicting the behavior of those that are similar to us. Reputation also allows us to trust without actually building a trusting relationship firsthand. These interactions work toward building trust in social relationships. As long as the routine of this daily life continues, the general feeling of trustworthiness will increase.

Misztal describes "Trust as Passion" as modern friendships that are based on familiarity and trust. With these aspects of friendship, an element of risk exists, which is tolerated because the relationship is deemed more valuable than the threat contained in the risk. If this faith in friendship is violated, the painful implications will run deeper than typical social interaction violations. The closer the ties a person has with group members, the greater the trust will be given to them. This type of community trust is mandatory for an effective democratic society. Even with this aspect of close ties, technology has provided the means to expand social contacts, although these contacts are more impersonal. This new method for sharing values and culture helps to foster understanding and cooperation.

"Trust as Policy" focuses on social cooperation as a resolution for today's problems. This component of trust requires public participation in the governmental process. If people do not trust it, they will not participate. If trust is present, cooperation is enhanced and solidarity will intensify. With cooperation and solidarity, governmental power will be viewed as legitimate because both the public and the government that oversees the public conceived it. Leiss (1995) also points toward stakeholder involvement in management decisions. As long as the public is protected from abuse of this trust, the public will view the decisions as acceptable and legitimate.

Lewis and Weigert (1985) include a dimension of trust, based on social norms, called "behavioral trust." This risky action supposed that all parties would act appropriately. When we view others as trusting in us, we try to reciprocate by placing more trust in them. Renn and Levine (1991) advance this social norm basis with one of their components of trust being "consistency." In addition, Kasperson, Golding, and Tuler (1992) propose "predictability" as a social trust dimension with a social norm basis. These actions produce a trusting behavior which helps bind people together.

Trust as procedural justice

For judgments of authoritarian decisions to be deemed legitimate and for the authors to be judged trustworthy, perceived fairness in the decision-making process is paramount. This includes voluntarily accepting these decisions due to the public previously giving consent to the

decision making process. Kasperson (1986) has a dimension of social trust, a view of the institution as "unbiased," that allows for a judgment of fairness in the decision making process. Kramer and Tyler (1996) also allude to this idea of fairness in their discussion of how social relationships evolve to eliminate "free ridership." Renn and Levine (1991) go so far as to include "fairness" as one component of trust.

The previous work describes trust as primarily a binary relationship, with a focus on one of two factions. The first of these factions implies that the public will be more willing to defer their judgments to government institutions for policymaking. The second faction is whether public participation should be encouraged or discouraged, depending on the participants' particular viewpoint, regardless of the level of trust. A few studies have suggested that public trust is reflexive in its relationship to public participation. That is, social trust will predict the extent of the demands for public participation. It will also be considered a commodity produced by how properly the government meets these demands. This study implies that the relationship between social trust and public participation is more complex than has been suggested previously and, therefore, further investigation is warranted.

CHAPTER III

METHODOLOGY

Model

The model (Figure 3) used in this study contains the three dimensions of trust in decision making. The first dimension is found on the horizontal or X-axis. The X-axis represents the amount of concordance among stakeholders. Social trust, as demonstrated in the literature, will predict the extent of the public's demand for participation. Negative X (left) is labeled "Conflict" and positive X (right) is labeled "Concordance." The ends are extremes, defined as total conflict and total concordance.

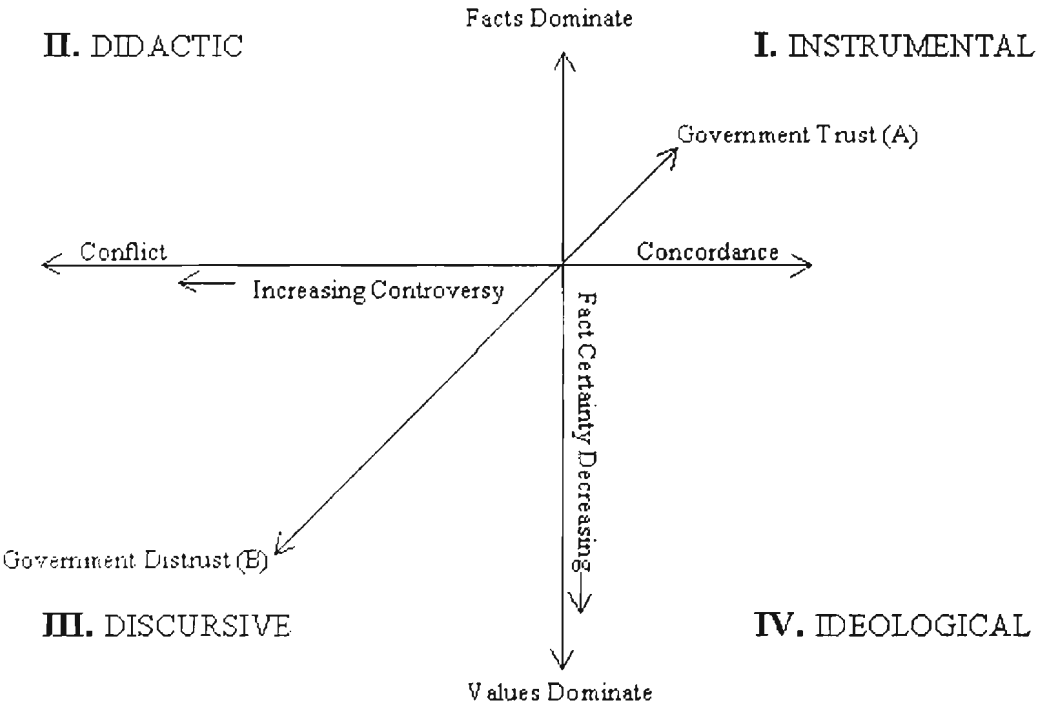

Figure 1. Prescriptive model for trust and policy making legitimacy (Focht 1995)

The second dimension is located on the vertical or Y-axis. The Y-axis describes the substantive basis for a decision context. Positive Y (top) represents a decision context based on scientific facts. Negative Y (bottom) represents a decision context based on the stakeholders' values.

The model is drawn disproportional. The reason for the disproportional adjustment on the X-axis is concordance needs to be near total for placement on the concordance side of the model, resulting in a coercive strategy. Support for the adjustment comes from the initial card sort where the eight strategies (representing the eight octants of the model) are ranked as high, moderate, or low importance. Only if concordance is ranked "high" would enough concordance be judged present to utilize a concordance-based (agreement exists) strategy. If concordance is ranked "moderate" or "low", enough controversy exists to warrant placement on the conflict side of the model, requiring a persuasive strategy. The result is a disproportionately larger conflict component of the model.

The disproportional adjustment on the Y-axis results from a similar cause. A facts-dominant strategy (placement in quadrants I or II) would require that facts are highly salient and highly certain with values having a low salience. A change in any one of the three requirements would force a values dominant strategy (quadrants III or IV). The initial card sort supports this adjustment to the model. The facts-dominant cards must be ranked as "highly important" to warrant a fact-based strategy. "Moderate" or "low" rankings show a reduced fact salience or reduced fact certainty and thus force a values based strategy. The result is a disproportionately larger value component of the model. A more in-depth discussion of this component of the model appears in the model assessment section.

The third dimension of the model, government trust, is similarly disproportionate. Trust in the government must be ranked as "high" on the initial card sort in order to be judged as preferring a deference to government (A) strategy. "Moderate" or "low" rankings default to preferring a distrust of government (one without deference or B) strategy.

Analysis of a respondent's assessment of these two dimensions will produce a quadrant assignment that corresponds to a particular management strategy. For instance, the respondent may judge that stakeholders are in agreement and that facts should dominate the decision context. The quadrant "I" results as a combination of concordance (right side of model) and fact-based decision context (top of model) prescribing an instrumental management strategy.

Added to the model is the third dimension of governmental trust. Trust, in this instance, refers to the willingness of the public to defer to government institutions in policymaking. This "trust" dimension is the diagonal (a three dimension model would show this axis perpendicular to the other two axes) or Z-axis. The Z-axis represents the respondent's level of trust in the government. Positive Z refers to judgments of trust in the government (labeled "A" on the model). Negative Z refers to judgments of distrust of the government (labeled "B" on the model). The addition of the "trust" dimension turns the quadrants into octants. Adding to the previous example, if the respondent distrusts government, the negative placement on the Z-axis results in a "B" judgment of trust added to the quadrant "I" determination. The resulting octant placement for this respondent is IB.

The IB designation prescribes a particular decision-making strategy. The decision context would be classified as reformative policymaking, without deference. Specific components of this context are:

- Facts dominate, therefore, analytic procedures are appropriate;
- Social concordance exists, therefore, coercive approaches are appropriate;
- Trust of government's ability is low, therefore, deference cannot be expected;
- Hence, policymaking procedures that require reform by non-governmental experts are appropriate.

The recommendation prescribed by the model would be that independent experts formulate and perhaps implement the policy with an emphasis on efficiency and effectiveness. Further discussion can be found in the section "Model Assessment."

Preparation

In preparation for the fieldwork associated with this study, several methods to involve interested and knowledgeable participants were utilized. Land ownership maps from a local realtor were obtained. These maps indicated who were landowners. These were matched with names in the phonebook and telephone calls were made. Other methods included talking to business owners located within the basin, either by telephone or by personal contact. Some

"door to door" contacts were made with landowners, renters, and other people who were, at the time, utilizing the recreational facilities. Upon the completion of each interview, each person was asked to identify any other people who would be interested and knowledgeable about the topic and would want to participate or anyone who had a different point of view.

Interview

A standard format was utilized for each interview. Upon meeting each of the 39 participants, the necessary paperwork for permission and demographic data were completed (see Appendixes A, B, and C for samples). The open-ended interviews were conducted next. The primary focus of these interviews were participants' opinions on how decisions about managing IRB impacts should be made and who should make decisions about managing them. This part was utilized to probe the participants' thinking to determine all aspects of their impact management preferences. A general understanding of how the participant viewed IRB management was formulated. This usually lasted one to two hours.

Upon completion of the open-ended interview, Likert scales were utilized to bring focus to the generalizations formulated concerning the participants IRB management philosophies. These Likert scales focused on three main questions. These were:

1) Whom do you trust to make IRB management policy (three options);
    a) The government (three options);
        i) Federal – Environmental Protection Agency and others;
        ii) State – Oklahoma Scenic Rivers Commission, Oklahoma Department of Environmental Quality, etc.;
        iii) Local – county and municipal governments that have significant authority over the IRB;
    b) Independent technical experts, (such as scientists, professional river basin managers, and professional natural resource planners);
    c) Self-governance by stakeholders, (such as property owners, local governments (not included in 1), users, and others.);

2) What criteria should be considered in making IRB management policy;

3) How should IRB management policy be made.

Evaluation

The Likert scales were evaluated using a double-focused card sort. The participants were instructed to rank the impact management cards in order of their relative subjective preference. A grouping of how important the particular octant's IRB management decision-making strategy is to the participant was produced. Each card was placed in either a group of high importance, moderate importance, or low importance, with no minimum or maximum number in any group. Within each group of cards, the participant ranked strategy preferences from most preferable to least preferable. This provided the second focal point, the preference order. By combining results of these exercises, it is possible to assess the extent to which the legitimacy model is supported.

Model Assessment

The decision context incorporates three separate dimensions: fact-value salience; level of controversy or concordance; and level of social trust. Each dimension was the focus for one or more components of the Likert scales. The scales provided a foundation for the participant's views about the dimensions of IRB management. Once the participant's views were known, the model was utilized to predict the course of action most likely to find acceptance. Once the model prescribed a course of action, eight cards containing management preferences were sorted. The management preferences corresponded with the preferred management option for each octant. The importance of each octant (highly important, moderately important, low importance) were determined first. Next the management strategy preferences were ranked. The results of the card sorts were compared to the predictions by the model. The comparison supported, partially supported, or did not support the model. Individual and basin wide comparisons were made.

The first dimension listed above concerns the relative salience of facts versus values as the dominant decision-making criteria in IRB impact management policymaking. This dimension is

actually a composite of three sub-dimensions: fact salience, fact certainty, and value salience. If facts dominate values (high fact salience AND high fact certainty AND low value salience), then decisions based only on facts using analytic techniques are appropriate. These decision strategies rely on rational approaches and objective criteria. Rational approaches tend to be more economically efficient and potentially more technically effective than non-rational approaches. They are only applicable when objective analysis is possible.

If values dominate facts (high value salience OR low fact salience OR low fact certainty), then decisions that consider these values using deliberative techniques are appropriate. When highly certain and salient facts are not available to make decisions, or when values are highly salient, no choice is available but to rely on values as decision criteria. Reliance on values demands that deliberative decision strategies be adopted because values are subjective and do not lend themselves to objective ranking. Deliberative processes maximize political acceptance but are often inefficient. For this reason, many policymakers prefer to use analytic approaches. In this case, deliberation can be used to increase fact certainty and/or salience through fact-finding or to produce consensus on a course of action through finding common values, producing new values, or a combination of both.

The second dimension of decision context concerns the relative social consensus on a preferred river basin management policy. This dimension is bounded at one extreme with complete social concordance (consensus/agreement) and on the other with total social controversy (dissensus/disagreement). If concordance is present, then decisions that employ coercion are appropriate. In other words, if stakeholders agree on a preferred course of action, then it is entirely appropriate to insist on compliance with that preference. If controversy is present, then decisions that encourage compliance using persuasion are more appropriate. Forcing compliance when substantial disagreement on a preferred policy exists will likely intensify the controversy. Policies that placate one side are likely to elicit strong opposition by the other side. In this case, persuasive approaches that are designed to build consensus are most appropriate.

The last legitimacy dimension concerns stakeholders' trust of government policy makers. This dimension is also a composite dimension, comprised of two sub-dimensions: technical competence and shared values. The technical competence sub-dimension is most applicable to fact-based decision contexts that deal with ability of government to do the right thing (competence). The shared-values subdivision is most applicable to value-based decision contexts that deal with discretion (will government do the right thing?).

If government trust is high (judged technically competent AND willing to honor fiduciary obligations), then stakeholders are more willing to defer to their ability and discretion. In this case, little stakeholder participation is necessary or desired. If government trust is low (judged technically incompetent OR not willing to honor fiduciary obligations) then stakeholders are less willing to defer to their ability and discretion and will instead insist on more participation in the policymaking process. Overlaying these three dimensions orthogonally produces eight regions or octants of decision context. Below are descriptions of these eight contexts and the recommended policy making strategy that is most appropriate to each.

Octant IA: Reformative policymaking, with deference;

- Facts dominate, therefore, analytic procedures are appropriate;
- Social concordance exists, therefore, coercive approaches are appropriate;
- Trust of government's ability is high, therefore deference can be expected;
- Hence, policymaking procedures that require reform of noncompliance situations by government are appropriate.

Recommendation: The Weberian bureaucratic ideal is suited to this decision context. Government formulates and implements the policy. Emphasis is on efficiency and effectiveness.

Octant IB: Reformative policymaking, without deference;

- Facts dominate, therefore, analytic procedures are appropriate;
- Social concordance exists, therefore, coercive approaches are appropriate;
- Trust of government's ability is low, therefore, deference cannot be expected;

- Hence, policymaking procedures that require reform by non-governmental experts are appropriate.

Recommendation: Same as above except that independent experts formulate and perhaps implement the policy.

Octant IIA: Informative policymaking, with deference;

- Facts dominate, therefore, analytic procedures are appropriate;
- Social controversy exists, therefore, persuasive approaches are appropriate;
- Trust of government's ability is high, therefore, deference can be expected;
- Hence, government-formulated and implemented didactic policies designed to edify the affected public to facilitate an informed consensus are most appropriate.

Recommendation: Government sponsors education program designed to foster consensus based on universal understanding of relevant facts.

Octant IIB: Informative policymaking, without deference;

- Facts dominate, therefore, analytic procedures are appropriate;
- Social controversy exists, therefore, persuasive approaches are appropriate;
- Trust of government's ability is low, therefore, deference cannot be expected;
- Hence, independent expert-formulated and implemented policies designed to inform the public work best.

Recommendation: same as above, but independent experts sponsor the educational program.

Octant IIIA: transformative policymaking, with deference;

- Values dominate, therefore, deliberative procedures are appropriate;
- Social controversy exists, therefore, persuasive approaches are appropriate;
- Trust of government's ability is high, therefore, deference can be expected;
- Hence, government policymaking designed to transform controversy and uncertainty into consensus and greater certainty is preferred.

Recommendation: Government sponsors dialogue among stakeholders in an order to fashion policy. Emphasis is on consensus building and fact-finding.

Octant IIIB: transformative policymaking, without deference;

- Values dominate, therefore, deliberative procedures are appropriate;
- Social controversy exists, therefore, persuasive approaches are appropriate;
- Trust of government's ability is low, therefore, deference cannot be expected;
- Hence, non-governmental parties must facilitate transformation of controversy and uncertainty into consensus and certainty.

Recommendation: Government is just another stakeholder, no better or worse than any other, thus deliberation must either be unconstrained or facilitated by an independent party. Emphasis is on consensus building and fact-finding.

Octant IVA: Conformative policymaking, with deference;

- Values dominate, therefore, deliberative procedures are appropriate;
- Social concordance exists, therefore, coercive approaches are appropriate;
- Trust of government's ability is high, therefore, deference can be expected;
- Hence, government has a mandate to force conformance with accepted cultural norms and stakeholder preferences.

Recommendation: Government adopts a trustee view of representations, i.e., ensured that stakeholders know that the coercive policy is consistent with their values. Emphasis is on maintaining trust and legitimacy.

Octant IVB: Conformative policymaking, without deference;

- Values dominate, therefore, deliberative procedures are appropriate;
- Social concordance exists, therefore, coercive approaches are appropriate;
- Trust of government's ability is low, therefore, deference cannot be expected;
- Hence, conformance with stakeholder expectations must be articulated through policies formulated by stakeholders themselves and implemented by government only with aggressive oversight and strict accountability measures put in place.

Recommendation: same as above except that stakeholders engage in deliberation and government adopts a delegate view in which it acts as an agent of the people. Emphasis is on building trust and legitimacy.

A hierarchical agglomerative cluster analysis technique, Ward's Method, was used to determine how similar concepts were grouped with respect to importance and how participants are grouped with respect to similar rank orders. After data entry into SPSS, Ward's Method of analysis was performed and dendrograms were printed out across participants and across octants. The number of clusters was determined from the dendrograms. The clusters were then interpreted.

Pearson's correlation was performed on the Likert scale data to determine if a significant correlation ($p < 0.05$ level; two tailed) exists between any two items within the Likert scales.

CHAPTER IV

RESULTS

Strategy Predictions

Legitimated Illinois River Basin management policy may be developed utilizing a prescriptive model that analyzes the three dimensions of trust decision making. This hypothesis is based on several disagreements about the nature of IRB impacts and how and by whom they should be managed. These disagreements are inherent in the following questions:

- From a qualitative perspective, what are the impacts that may be occurring to the IRB?
- From a quantitative perspective, how severe are the impacts to the IRB?
- How should these impacts be managed?
- Who should manage the IRB impacts?

This study implies that the relationship between social trust and public participation is more complex than has been previously suggested in the literature. It incorporates three separate dimensions: fact-value salience; level of conflict or concordance; and level of social trust. Overlaying these three dimensions orthogonally produces eight regions (octants) of decision-making context. Where the public falls within this matrix will prescribe a course of action for policymaking that will be more readily perceived as legitimate and work toward development of social trust.

The Likert scale data (TABLE I) shows the averages for each scale. The ranking is on a scale of 1 – 9. Each trust dimension is evaluated to provide a preference for that particular dimension. The three evaluated dimensions are placed together orthogonally. From these basin wide data, a decision-making strategy can be predicted that best fits the overall viewpoint of the IRB participants.

TABLE I

AVERAGES OF LIKERT SCALE RANKINGS

Trust Dimension	Likert Scale	Average Ranking	Strategy Prediction
Fact-Value			Value
	Fact Salience	8.2	
	Fact Certainty	7.2	
	Value Salience	7.6	
Concordance-Conflict			Conflict
	Concordance	5.5	
Trust-Distrust			Distrust
	Fed. Govt. Trust	5.3	
	Fed. Govt. Competence	6.0	
	Fed. Govt. Shared Values	4.8	
	State Govt. Trust	5.7	
	State Govt. Competence	6.0	
	State Govt. Shared Values	5.5	
	Ind. Expert Trust	7.0	
	Ind. Expert Competence	7.5	
	Ind. Expert Shared Values	6.9	
	Stakeholder Trust	6.6	
	Stakeholder Competence	6.0	
	Stakeholder Shared Values	6.6	

As was discussed in Chapter III – Model Assessment, values dominate facts when values have high salience OR facts have low salience OR fact certainty is low. For the fact-value dimension, a ranking of 1 – 3 corresponds to a judgment of low importance. A ranking of 4 – 6 indicated a judgment of moderate importance. High importance is judged by a ranking of 7 – 9. Low and moderate importance judgments are both considered being "low" for purposes of evaluating this dimension and are evidenced by the disproportionate scaling of this dimension in the model. As is displayed in TABLE I, fact salience and fact certainty both rank of high importance. Because value salience is also ranked highly important a value-based decision-making strategy is most appropriate.

The concordance-conflict dimension has a similar evaluative method. For the concordance-conflict dimension, a ranking of 1 – 3 corresponds to a judgment of existing conflict. A ranking of 4 – 6 indicated a judgment of mixed amounts of conflict and concordance. Stakeholder concordance is judged by a ranking of 7 – 9. Conflict and mixed conflict and concordance judgments are both considered being "conflict" for purposes of evaluating this dimension and like the fact-value dimension, are evidenced by the disproportionate scaling of the concordance-

conflict dimension in the model. The average rating of 5.5 would fall into the mixed conflict and concordance category and thus be considered conflict for evaluation. A strategy involving consensus building to resolve conflict would be predicted from these data.

The trust-distrust dimension is fairly complex. The primary aspects of the dimension are federal and state government trust. Independent expert and stakeholder trust are both examined for purposes of leadership potential should deference to government be opposed through distrust. Each of the four above-mentioned components of the trust-distrust dimension have supportive evaluations of competence and amount of values shared with the participant to assist with analysis of reasons for trust or distrust. The disproportionate scaling of the trust-distrust dimension in the model is supported by the evaluative methods utilized for this dimension. A ranking of 1 – 3 corresponds to a judgment of low trust, competence, or amount of shared values, depending on which scale is observed. A ranking of 4 – 6 indicated a judgment of moderate. A high judgment is determined by a ranking of 7 – 9. Low and moderate judgments are both considered being "low" for purposes of evaluating this dimension. The primary components of the trust-distrust dimension (federal and state government trust) fall into the moderate range and are considered "low trust." The prediction for the trust-distrust dimension is "without deference to the government." Independent experts were ranked "highly trusted" and would be preferred by the participants to take leadership of the decision-making process.

The overall basin wide predicted decision-making strategy is apparent. The predicted strategy should be based on values, consensus building, and distrust of the government. The corresponding octant from the model would be IIIB, transformative policymaking, without deference.

Basin Wide Participant Strategy Importance and Preference

TABLE II

AVERAGES OF STRATEGY IMPORTANCE RANKINGS
CONCORDANCE-CONFLICT FOCUS

Consensus Building Strategy	Average Ranking	Concordance Exists Strategy	Average Ranking
IIA	1.8	IA	2.9
IIB	1.5	IB	2.8
IIIA	1.9	IVA	2.6
IIIB	1.4	IVB	1.8[1]
Average for Consensus Building Strategy	1.65	Average Concordance Exists Strategy	2.53
Longitudinal Difference: 0.88			

The item of primary concern for the stakeholder participants is obviously consensus building. The card sort data (TABLE II) for preferred strategy importance supports the notion that controversy is a problem, requiring consensus building for rectification. The consensus building strategies had an average ranking of 1.65 and the strategies where concordance is present rank 2.53. The ranking scale is 1 – 3, 1 being most important and 3 being least important. The longitudinal difference (difference between the two averages for a particular trust dimension) can be determined from these results. The higher the longitudinal difference, the greater the bipolar difference within a trust dimension, thus the higher is the level of importance for the particular dimension. Conflict was predicted by the Likert scales (TABLE I) requiring a consensus building strategy. The Likert scale prediction, based on the trust model, was confirmed by the management preference strategy selection of consensus building. The level of importance for consensus building is high as evidenced by the longitudinal difference of 0.88.

TABLE III

AVERAGES OF STRATEGY IMPORTANCE RANKINGS
GOVERNMENT TRUST-DISTRUST FOCUS

Trust of Government Strategy	Average Ranking	Distrust of Government Strategy	Average Ranking
IA	2.9	IB	2.8
IIA	1.8	IIB	1.5
IIIA	1.9	IIIB	1.4
IVA	2.6	IVB	1.8[1]
Average for Trust of Government Strategy	2.30	Average for Distrust of Government Strategy	1.88
Longitudinal Difference: 0.42			

Another area of concern for the stakeholder participants is in the area of governmental trust (TABLE III). The preferred strategy indicates that government is not trusted. Using the ranking scale described above (1 – 3), "trust of government" strategies averaged 2.30 and "distrust of government" strategies averaged 1.88. The longitudinal difference determined from these results is 0.42. Distrust of government was predicted by the Likert scales (TABLE I) requiring a strategy where deference is not granted to the government. The Likert scale prediction, based on the trust model, was confirmed by the selected management strategy incorporating a focus on government distrust.

TABLE IV

AVERAGES OF STRATEGY IMPORTANCE RANKINGS
FACT-VALUE FOCUS

Fact-Based Strategy	Average Ranking	Value-Based Strategy	Average Ranking
IA	2.9	IIIA	1.9
IB	2.8	IIIB	1.4
IIA	1.8	IVA	2.6
IIB	1.5	IVB	1.8[1]
Average for Fact-Based Strategy	2.25	Average for Value-Based Strategy	1.93
Longitudinal Difference: 0.32			

The third area of concern for the stakeholder participants is fact-based strategies versus value-based strategies (TABLE IV). The selected strategy indicates value-based strategies are most preferred. Using the above ranking scale, "fact-based" strategies averaged 2.25 and "value-

based" strategies averaged 1.93. The longitudinal difference determined from these results is 0.32. Value-based strategies appear to be the least important of the three dimensions, contrary to what would be expected. An explanation for a higher reliance on facts is that the participants ranking facts high feel that the facts support their viewpoint and values. If the facts are later found to be in opposition to the participant's views, the participant will place less reliance on the facts and more on value-based decisions. A value-based strategy was predicted by the Likert scales (TABLE I). The Likert scale prediction, based on the trust model, was confirmed by the value-based management strategy being selected.

TABLE V

COMPARISON OF STRATEGY PREDICTION TO STRATEGY SELECTION
STRATEGY IMPORTANCE

Trust Dimension	Decision Strategy Prediction (Likert Scales)	Decision Strategy Selection (Importance Card Sort)			
		High – Importance Average Ranking	Longitudinal Difference to Low Ranking	Dimension Order of Importance	Selected Strategy
Fact-Value	Value	1.93	0.32	3	Values
Concordance-Conflict	Conflict	1.65	0.88	1	Conflict
Trust-Distrust	Distrust	1.88	0.42	2	Distrust
Overall Prediction:	Octant IIIB – Discursive, without deference	Overall Selection:	Octant IIIB – Discursive, without deference		

With these data, we see two patterns of importance. The first is the relative importance of each dimension in the policy-making strategy as evidenced by the evaluative level placed on the dimension. The levels are 1.65 for consensus building strategies, 1.88 for the lack of government trust aspect, and 1.93 for the inclusion of values in the decision process. Clearly, consensus building is a primary concern of the IRB participants. The second pattern of importance is the longitudinal difference in the averages of each end of the bipolar dimensions of trust. The greater the distance, the stronger the feelings generated toward the dimension. The perfect match of average high-importance rank to importance judgment based on longitudinal difference supports a dimension preference order that should be considered in the decision process. All three

dimensions should be considered with the dimension order directing efficient allocation of resources in the decision-making strategy. Efficient allocation of resources can be crucial depending on the amount of resources available. The work of Earle and Cvetkovich (1995) focusing on complexity reduction support the necessity for the proper placement on the "resources available" continuum. A properly selected management strategy will reduce complexity in the decision-making process.

Through both of these evaluative methods, consensus building is evidenced as a primary concern, with government trust being of secondary importance. Value-based decisions come in third and, as expressed by the proximity of the value based numerical data to the government trust data, a very close third.

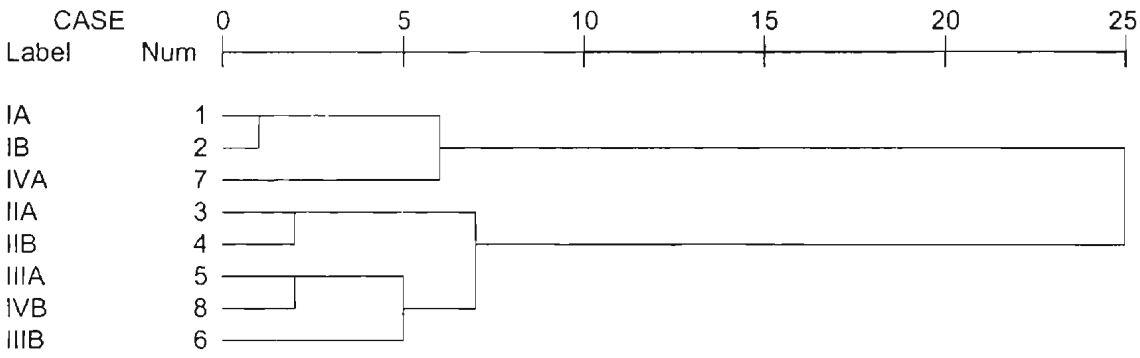

Figure 2. Dendogram cluster analysis across octants

These data fall in line with the octant cluster analysis (Figure 2). Octants are ranked by order of importance from cluster one (octants not expressing preferred strategies), the preferences in rank order are IVA, IB, and IA. For cluster two (octants expressing preferred strategies) are IIIB, IIB, IVB and IIA (tie), then IIIA. Octant IVB shows up as an atypical result, due to the card wording that failed to thoroughly explain the intent of the card. A quick glance at the strategy preference order, discounting the atypical IVB result, shows the four most important strategies involve the primary strategy (consensus building), supporting the model's prediction of conflict. The second dimension predicted by the model, lack of government trust is supported with the deference to government strategies ranked as inferior to low government trust strategies. The prediction of value-based strategies taking precedence over fact-based strategies is supported, although not as intensely as would be expected. The lack of overwhelming strength for values is

due to many participants feeling that facts support their value set. If the facts turn out to work against the participant's values, less reliance will be placed on facts and more on value-based decision-making strategies.

Supportive evidence for the model is also found within the "not preferred" strategies. Value-based strategies ranked higher than fact-based strategies. Similarly, government distrust strategies ranked higher than government trust strategies. Participant ranking results in the diametric opposite of the preferred (IIIB) strategy being the least preferred strategy (IA). Hence, support for the model is found by analysis of the data from a negative viewpoint.

The averages of the octant preference rankings, with the lowest scores being the most preferred, are displayed in Table VI. Dendrogram cluster 1, with an overall cluster average of 6.3, represents the strategies not preferred. Cluster 2, with an overall average of 3.4, represents the most preferred strategies. With the lower overall preference average, cluster 2 contains the most preferred strategies, including the strategy (IIIB) that dominated the participants' results.

TABLE VI

SUMMARY OF OCTANT PREFERENCE RATINGS

Octant	Dendogram Cluster	Preference Rating
IA	1	6.8
IB	1	6.3
IIA	2	3.7
IIB	2	2.8
IIIA	2	3.8
IIIB	2	2.6
IVA	1	5.9
IVB	2	4.1

The preference rating in the table is the average for each octant, 1 being most preferred to 8 being least preferred. These data show a strong preference for consensus building first, strategies for addressing low government trust second, and value issues third. Thus, the strategy predicted by the model, a transformative policymaking strategy, without deference (Octant IIIB) is again supported as the overall decision strategy preference for the basin participants.

TABLE VII

COMPARISON OF STRATEGY PREDICTION TO STRATEGY SELECTION
STRATEGY PREFERENCE

Trust Dimension	Decision Strategy Prediction (Likert Scales)	Decision Strategy Selection (Strategy Preference Card Sort)			
		Preferred Strategy Average Ranking	Longitudinal Difference to Least Preferred Ranking	Dimension Order of Importance	Selected Strategy
Fact-Value	Value	4.10	0.80	3	Values
Concordance-Conflict	Conflict	3.23	2.55	1	Conflict
Trust-Distrust	Distrust	3.95	1.10	2	Distrust
Overall Prediction:	Octant IIIB – Discursive, without deference	Overall Selection:	Octant IIIB – Discursive, without deference		

The data from TABLE VI (strategy preference) was compared in a fashion similar to the data for strategy importance at the beginning of this chapter (TABLES II-IV). The results for each comparison of strategy preference matched with the results from strategy importance. A summary of this data is found in TABLE VII.

With these data, we see the same two patterns observed with the strategy importance results. First is the segment of a preferred strategy contained in each dimension. Evidence is found in the evaluative level placed on each dimension. Again, consensus building is a primary concern of the IRB participants, followed in order by distrust of government and value-based decisions.

The second pattern observed is the longitudinal difference in the averages of each end of the bipolar dimensions of trust. The perfect match of average preferred strategy rank to a strategy preference judgment based on longitudinal difference supports a dimension preference order that should be considered in the decision process. Further support is gained for considering all three dimensions in order for efficient allocation of resources in the decision-making strategy.

Through both of these evaluative methods, consensus building is again evidenced as a primary concern, with government trust being of secondary importance. Value-based decisions come in third. Results from the three dimensions support the strategy prediction determined by the model.

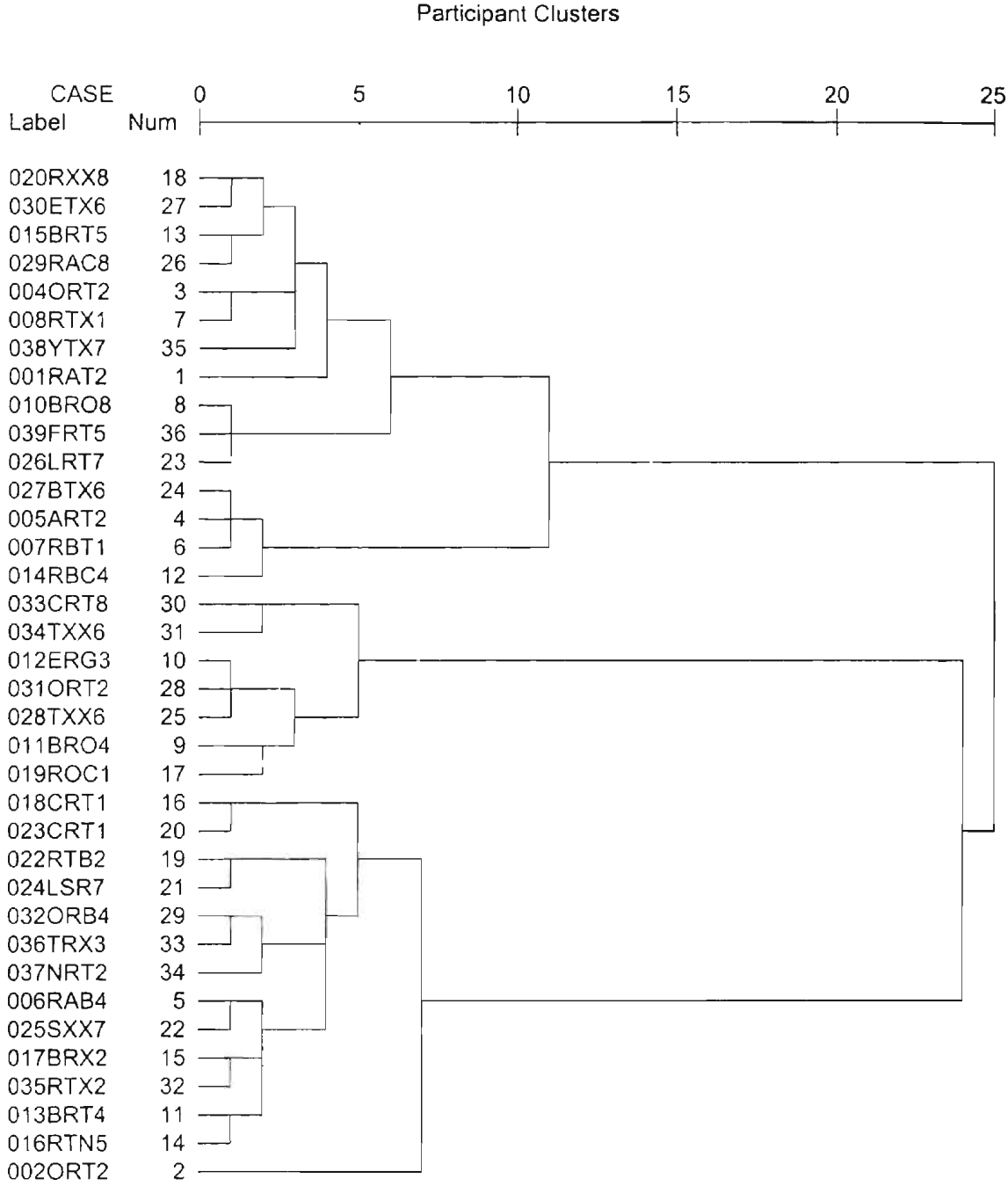

Figure 3. Dendogram cluster analysis across participants

Cluster Analysis was also performed across stakeholder participants, resulting in three distinct clusters (Figure 3). For a breakdown of each cluster, see Appendix G – Cluster Raw Data. The clusters are grouped by the determining factor(s) in the decision-making process. For cluster 1, the determining factor is a value-based decision with consensus building and distrust of the government following. The cluster 2 decision context indicates a need to address consensus

building and the lack of trust in the government. Cluster 3 is similar to cluster 2 but has only one dimension of focus, building consensus among stakeholders. The defining characteristic for each cluster seems not to only be who is included in the cluster, but who is left out. TABLES VIII – X focus on each particular cluster.

TABLE VIII

AVERAGES OF STRATEGY IMPORTANCE AND PREFERENCE RANKINGS
CLUSTER 1

Dimension	Importance		Longitudinal Difference	Preference		Longitudinal Difference
	Result	Ave.		Result	Ave.	
Fact-Value	Value	1.60	0.88	Value	3.18	2.62
Concordance -Conflict	Conflict	1.73	0.45	Conflict	3.45	2.08
Trust-Distrust	Distrust	1.85	0.38	Distrust	3.93	1.12

Cluster 1 (TABLE VIII) participants express the importance of values in their rankings of both IRB management strategy importance and IRB management strategy preference. The component of a preferred strategy that is secondary in both areas is consensus building followed distantly by distrust of the government.

The makeup of cluster one is primarily residential or businesses that would not be directly impacted by governmental regulations pertaining to IRB management. Of the three primary stakeholder classes that would be impacted by governmental regulations (Confined Animal Feeding Operations [CAFO], Float trip outfitters, and Nurseries), only one participant from cluster 1, a float trip outfitter, belonged to this group. There were no stakeholders in cluster 1 with a primary stakeholder classification of CAFO or Nursery. Most of the participants with an agricultural (non-CAFO) primary or secondary classification were members of cluster 1. The participants of cluster 1 are fairly well spread throughout the basin, having representation from each region. The Flint Creek region participants, with one exception, are grouped with cluster 1.

The lack of participants that would be initially impacted by governmental regulations explains why distrust of the government is the lowest of the three components of the IRB management decision making process. The same reasoning helps to explain why value-based decisions are of primary importance. Without governmental regulations, facts to support said regulations are not as salient. The participants of cluster 1 will therefore focus on values. Realizing that the variety

of stakeholders in the basin will in turn generate a complex value set, the participants feel there will be a need for consensus building. Consensus building therefore falls between distrust of government and value-based decisions in terms of relevance. The overall analysis of cluster 1 supports the IRB management strategy predicted by the model.

TABLE IX

AVERAGES OF STRATEGY IMPORTANCE AND PREFERENCE RANKINGS
CLUSTER 2

Dimension	Importance		Longitudinal	Preference		Longitudinal
	Result	Ave.	Difference	Result	Ave.	Difference
Fact-Value	Value	2.15	0.05	Fact	4.10	0.78
Concordance -Conflict	Conflict	1.75	0.85	Conflict	3.20	2.58
Trust-Distrust	Distrust	1.78	0.80	Distrust	3.35	2.28

Cluster 2 (TABLE IX) participants convey the need for consensus building and IRB management strategies that focus on distrust of the government. This dual importance is expressed both in IRB management strategy importance and IRB management strategy preference rankings. Interestingly, the Fact-Value dimension showed very little longitudinal difference. Two possible explanations exist for why neither a preference for facts nor values was evident. The first possible explanation is that cluster 2 participants belong to stakeholder classes that utilize facts in their daily activities and therefore would place a higher salience and certainty on facts. The second possible explanation is that the cluster 2 participants feel that the relevant facts support their values and viewpoints. The possibility also exists that the reason is a combination of the two possible explanations mentioned above.

The makeup of cluster 2, with one exception, is non-residential as a primary classification. Included in cluster 2 are all participants with a primary classification of tourist (recreationist). No participants from any level of government belong to cluster 2. Also absent from cluster 2 is region 5 (Upper Lake Tenkiller form Etta Bent to Cherokee Landing). Only one representative from region 2 (Chewy Bridge to Highway 51 Bridge), a multi-generation float trip outfitter, is found in cluster 2. The only region 8 (Flint Creek) participant not in cluster 1 is found here. He owns a CAFO and no CAFOs were present in cluster 1. The one resident (primary classification) present in cluster 2 is a part-time worker for a float trip outfitter and is a former owner of a CAFO. His

inclusion in cluster 2 is for reasons similar to the Flint Creek CAFO owner. The businesses in cluster 2 are, with one exception, the type to be affected by governmental regulations.

The cluster 2 participants have a dual focus on consensus building and distrust of government based IRB management strategies due in part to their industries recently visibility in the media. The coverage has focused on possible negative affects to the IRB by the various industries. The need for consensus building with the IRB stakeholders becomes obvious, as many would view the industries in a negative light. With the negative media coverage, governmental agencies will be perceived as trying to correct the situation via regulations in a knee-jerk fashion. The government is therefore not trusted to take the correct action. Many of the cluster 2 participants may utilize scientific facts in their industries and therefore realize facts are salient. They may also feel that the facts support their viewpoint and thus rely on fact-based decision making strategies. The two reasons just mentioned, or a combination of them may account for the greater emphasis on facts than would be expected, thus equating facts with values resulting in an insignificant longitudinal difference between the two.

TABLE X

AVERAGES OF STRATEGY IMPORTANCE AND PREFERENCE RANKINGS
CLUSTER 3

Dimension	Importance		Longitudinal Difference	Preference		Longitudinal Difference
	Result	Ave.		Result	Ave.	
Fact-Value	Fact	2.00	0.20	Fact	4.35	0.28
Concordance -Conflict	Conflict	1.55	1.03	Conflict	2.98	3.02
Trust-Distrust	Distrust	1.95	0.28	Distrust	4.25	0.48

Cluster 3 (TABLE X) participants have a singular focus – consensus building. This focus is evidenced in both the IRB management strategy importance ranking and the IRB management strategy preference ranking. The rankings for the concordance-conflict dimension had the highest longitudinal difference found in the study. At the same time, rankings for the Fact-Value and Trust-Distrust dimensions were relatively insignificant. The insignificant results for the Fact-Value dimension follow the same reasoning as was found in the cluster 2 results. Even with the insignificant results for this dimension, it should be noted that facts slightly edged out value-based strategies in both IRB management strategy importance and IRB management strategy

preference. The reason for only a slight distrust of government follows the same lines of thought as did cluster 1.

Any participant with a nursery connection is part of the makeup of cluster 3. Absent from cluster three are any Flint Creek (region 8) participants, environmental group members, and tourists (recreationists) from outside the basin. The remainder of the cluster is made up of CAFO owners, business owners, float trip outfitters, and residents. With the emphasis on consensus building and the slight preference for facts, education-based management strategies would be appropriate for cluster 3 participants. Either governmental agencies or independent experts, due to the small longitudinal difference, could facilitate the educational forums. The preference would be for independent experts due to a slightly higher ranking.

TABLE XI

LIKERT SCALE AVERAGES BY CLUSTER

Cluster	Fact Salience	Fact Certainty	Value Salience	Concord.	Fed. Govt. Trust	State Govt. Trust
1	8.2	7.3	7.7	5.3	5.8	5.7
2	8.3	7.3	7.4	5.3	4.6	4.9
3	8.2	7.0	7.7	5.9	5.0	6.0

Some general observations can be gleaned from the cluster average comparisons (TABLE XI) and where the predicted strategy was ranked in preference order (TABLE XII). The averages contained in TABLE XI are based on a 1 – 9 scale. Rankings of 1 – 3 are judged low, 4 – 6 are judged moderate, and 7 – 9 are judged high. The exception to this is the concordance-conflict dimension. 9 represents total concordance and 1 is total conflict with the 4 – 6 range defaulting to conflict, based on the disproportionately drawn trust model.

TABLE XII

PREDICTED STRATEGY PLACEMENT IN PREFERENCE ORDER

Cluster 1		Cluster 2		Cluster 3	
Predicted	Order in Preference	Predicted	Order in Preference	Predicted	Order in Preference
IIIB	H2	IVB	H3	IIIA	H1
IIIB	H1	IIIB	H1	IVB	M5
IIIA	H2	IIIB	H1	IIB	H1
IVA	H1	IIB	H1	IIIB	M5
IVB	H2	IIIB	H1	IVB	H2
IIIB	H1	IIIB	H1	IVA	M3
IIIA	H1	IIIB	H1	IIIB	H3
IIIB	H1			IIIB	M5
IIB	H3			IIIB	M4
IIIB	H1			IVA	M5
IIIB	H2			IIIB	H3
IVB	H1			IIIB	H2
IIIA	M5			IIIB	M4
IVB	M3			IVB	H3
IIIB	H1				
Numerical Average:	1.8		1.3		3.3

TABLE XII shows how the Likert scale predictions matched the IRB management strategy rankings. Predictions for cluster 1 ranked high in the participants' strategy preference ordering with only two predicted management preferences being judged of moderate importance. Cluster 2 had the best strategy prediction to strategy preference average with all strategies ranked highly important. Cluster 3 participants had the poorest strategy prediction to strategy preference with half of the predicted strategies ranking of moderate importance. The reason for the lack of accuracy in the predictions is due to facts for cluster 3 ranking slightly higher than values. These facts, it is felt by the participants, support the participant's viewpoint and values, giving them more weight in the decision outcome. With values ranking nearly as high as facts, values should have taken precedence. The result is that value-based decision strategies were predicted over fact-based strategies. Since consensus building was the primary focus of cluster 3, values did not take on as important as a role. In addition, facts ranked slightly higher in the cluster analysis for cluster 3 than was predicted for each participant during the interview process. When the possibility of fact-based decisions are entered into the analysis, the Numerical Average for cluster 3 becomes 2.5. If the data is adjusted for the governmental trust issue, which was not of primary

importance, the Numerical Average is 1.9. These data suggest that dimensions not issued a high priority in the decision context are not as reliable for formulating a decision making strategy. All dimensions, though, should be taken into account for basin-wide decision making strategies, because all dimensions have importance to certain groups as was evidenced by the cluster analysis.

The first general observation from TABLES XI and XII is that fact salience is very important. Value salience is very important as well, but not so much as fact. Fact certainty is also very important, but is similar in importance to value salience. Concordance among stakeholder participants is mixed. Cluster 3 signifies a slightly higher concordance, but this cluster also has the least accurate octant prediction to octant selection ratio (TABLE XII), giving some explanation to why the cluster with a singular focus on consensus building would express the highest (although still moderate) amount of concordance. Cluster 2 participants rank the federal and state government trust the lowest (federal government is ranked as untrustworthy). Cluster 2 participants also rank the experts highest (nearly totally trustworthy) due to a high perceived competence and values nearly identical to the stakeholders (APPENDIX G – CLUSTER RAW DATA). Clusters 1 and 3 rank the governments' trustworthiness mixed, with the state faring slightly higher.

An overall strategy for the basin that addresses all three clusters would be one that incorporates values, consensus building, and deals with the lack of government trust. Developing the preferred strategy utilizes the results from the various methods for data analysis. Values for cluster 1 are of primary concern. Values have a relevance equivalent to facts for cluster 2 and cluster 3. As a result, value-based strategies are dominant for the Fact-Value Dimension. Consensus building is of primary concern for clusters 2 and 3 and secondary in importance for cluster 1. Thus, consensus building (conflict exists) strategies are dominant for the Concordance-Conflict Dimension. Strategies that include distrust of government are of importance for cluster 2, moderately important for cluster 1, and slightly important for cluster 3. Therefore, an IRB management strategy that does not include deference to the government should be considered. Combining all three dimensions into the model produces a preferred management strategy. The

Illinois River Basin would be best suited with a strategy that resembles Octant IIIB. This would again be a transformative policymaking strategy, without deference, supporting the model's prediction.

Pearson's Correlation

The Pearson's correlation analysis shows a significant correlation between five sets of Likert scale components (TABLE XIII). Four have significance at the 0.05 level (zero order correlation, two-tailed test) with a critical value of .327[2]. The first significant correlation is between fact salience and value salience. The second is the correlation between outcome preference agreement (concordance) and trust of state government. The third is between trust of experts and trust of state government. The fourth is between salience of values and competence of stakeholders. The last significant correlation (0.01 level) is between trust of experts and trust of federal government.

TABLE XIII

PEARSON'S CORRELATION DATA

Dimension 1	Dimension 2	Correlation Coefficient	Significance Level
Fact Salience	Value Salience	.400	$p < 0.05$
Concordance	Trust of State Government	.336	$p < 0.05$
Trust of Experts	Trust of State Government	.341	$p < 0.05$
Salience of Values	Competence of Stakeholders	.363	$p < 0.05$
Trust of Experts	Trust of Federal Government	.491	$p < 0.01$

The correlation between fact salience and value salience is suggested throughout the interviews: people utilize facts to help support or shape their values. The correlation between concordance and trust of the state government indicates that the state government is the preferred entity to facilitate consensus building strategies. The correlation between trust of experts and of state government and between trust of experts and federal government, suggests that governments, particularly federal, are seen as technically competent. The relatively low trust of government, coupled with high judgments of competence, suggests that distrust is not due to lack of expertise, but rather lack of shared values. The correlation between salience of values

and technical competence suggests that stakeholders trust each others factual knowledge, while recognizing that shared traditions and culture are also important.

These correlations support the results revealed in the participants' Likert scale responses and are corroborated by the trust model. The chief findings are:

- Values, shaped or supported by facts, are relevant to stakeholder policy preference;
- State government is trusted by concordance-minded stakeholders to facilitate policy implementation;
- Technical expertise is respected within state, and particularly in federal, governments;
- Stakeholders' values are salient, especially when utilizing these values with the stakeholders' competence to make decisions about the IRB.

Government experts are trusted to give factual, accurate information. This does not discount the salience of values, which is integral to IRB policy making. These results are consistent with the IIIB – transformative policymaking, without deference context; consensus building is needed, values are dominant (although shaped or supported by facts provided by government), and stakeholders are most competent to decide what is in the best interests of the basin.

CHAPTER V

DISCUSSION

Basin Analysis

The Illinois River Basin of this study consists of the Illinois River from the Arkansas State line to Cherokee Landing on Upper Lake Tenkiller. Also included are Flint Creek and Barren (Baron) Fork Creek from the Arkansas State line to its confluence with the Illinois River. The basin consists of a residential base with some industries such as: nursery operations, poultry farms, small grocery stores and restaurants, and float trip outfitters. Other concerns for the basin come from forestry and environmental people, local, state, and federal government, and various outside interests by college professors, naturalists, and tourists.

Participants within the basin, although in a basic disagreement about an acceptable policy, have several areas in which they are in agreement. They view both facts and values as being important. Even though facts ranked slightly higher, values dominate any policy discussion. Support for value dominance is found in the statement that values dominate facts if the following conditions are met: high value salience OR low fact salience OR low fact certainty. The residents of the basin prefer that the government not lead the decision-making process. Consensus building is recommended since the level of perceived stakeholder agreement is low.

The participants were evenly divided over their evaluation of who is trusted: government (federal and state); technical experts; and stakeholders. Overall, the participants ranked the federal government the lowest of the three in trustworthiness. The federal government is viewed as mixed in trustworthiness and in competence, with minimal values shared with the stakeholders. The state government ranked a little higher, except in the area of competence where they were judged equal to the federal government. The experts ranked the highest in how much they are trusted (fairly well), their competence (mostly competent), and in shared values (many shared). The stakeholder participants view themselves as mixed in technical competence. They were viewed as having more values shared with other stakeholders than with the federal or state governments. The experts on the other hand were judged as having more shared values

than participants have of each other. Stakeholders are fairly trusted, but once again, experts are trusted more. This is due to the experts high level of shared values (concern for the river) and their technical competence (trained in river basin management). In addition, some of the trust given to experts is due to the stakeholder participants knowing that something must be done. Many participants know that they are not technically competent to perform necessary scientific studies to generate relevant facts and confirm results, but they don't trust the government personnel enough to gather all relevant facts. As a result, these stakeholder participants defer to the experts the task of fact gathering. The facts are presented in forums facilitated by trained independent mediators. Debates over various river basin management policies are the focus of these meetings. The government can participate, but with no more authority than any other stakeholder. As a result of these meetings, the government adopts any agreement reached as management policy. Many stakeholder participants expressed that if all the facts were known, their views would be supported and their ideas of management would shine through. Overall, they felt that if changes were required, and the group (government or experts) formulating the policy had the facts to back up the policy, the stakeholder participants would comply. This would need to be a gradual process, and if implementation were to be extremely costly, some governmental assistance would be necessary.

The model worked fairly well with the basin. The overall predicted/preferred rating is 2.3 on a 1.0-8.0 scale, 1.0 being high. If the participants ranked M (predicted octant ranked medium in importance) were removed[3], the result jumps to 1.6, a very high level of support.

The summary analysis for the basin is that consensus building is the primary concern of the participants, with distrust of the government coming in a close second. Third-ranked is the value component of IRB decisions. The overall recommended option is IIIB; transformative policymaking, without deference, where independent experts research the facts, formulate the river basin management policy, and trained independent mediators facilitate consensus-building, value-based meetings where the government acts with the same authority as any other stakeholder. This is based on the overall picture of the basin participants, including participants' Likert scales (predictions), their card importance rankings, and their actual octant selections.

Across Stakeholder Participants

Cluster 1 – Values Dominate. The first cluster (FIGURE 3), containing 15 of the participants expressed in the dendrogram, is composed of participants that are fairly spread out over all regions and stakeholder classes. This includes one canoe rental operator who has been in service for only a few years. This operator was not a resident of the basin in the early 1980s and did not witness the legal problems between the basin and Fayetteville, Arkansas. One third of cluster 1 is comprised of participants from regions 1 and 2 (Illinois River from Highway 51 bridge to the Arkansas State line).

Some general observations of cluster 1 stakeholder participants include feelings that the federal government is competent. Government is perceived as possessing a different value set compared to the stakeholders, so trust falls. State government is viewed not as competent as the federal government but benefit from a higher percentage of shared values (as compared to the federal government). Reasons for this include state officials being closer to the problem and being representatives of the state, therefore, having more in common. With the variation present in federal and state government sub-scales (competence and shared values), the overall trust of state government is perceived to be similar to that of federal government. Independent experts are judged technically competent due to training in river basin management. These experts are evaluated fairly high in their level of shared values with stakeholder participants. This combination causes experts to be trusted at a higher level than any other stakeholder/managerial group. Stakeholder participants have a level of shared values with each other comparable to the level shared with experts. Stakeholders are ranked lowest in technical competence, which is the primary reason for an overall trust level below that of experts. Regardless, stakeholders still are accorded a fairly high level of trust. The feeling of trust results from an increase in the amount of shared values. These shared values develop from an understanding of the facts when the neighbors become "enlightened" and draw closer to the respondent's way of thinking.

Cluster 1 participants tend to utilize facts to a high level. This reliance on facts forms the basis for making value judgments. The ranking of fact salience as most important supports this observation, even though the facts in question have a slightly lower certainty. The overall basis of decision for this cluster of respondents is values. Even though values are ranked lower than facts, values are judged salient and, therefore, take precedence. Though facts cannot be ignored, they take a subordinate role.

The overall data analysis shows that cluster 1 members feel values should be the predominant focus of decision-making. The value-dominated cards from the card sort exercises illustrated a higher level of importance across the board. Fourteen of the 15 participants belonging to this cluster were predicted by the Likert scale data to have a values-oriented mindset. As for the 15th participant, although a values-based strategy was not predicted, it was selected as the most preferable strategy from the card sort exercise.

Analysis confirmed that after values, consensus-building strategies and strategies that indicate a lack of trust in government are similar in importance. Consensus-building strategies rank slightly higher. Eleven of the 15 participants ranked "perceived controversy" high. Two of the four, for which consensus building strategies were not predicted, selected a consensus building strategy as their most preferred option. In addition, 11 of the 15 (not the same 11) gave a high ranking to "lack of government trust." Three of the four ranking government trust highly, selected a government trust management option as the one most preferred.

Overall correlation of predicted strategy to preferred strategy was very high. This cluster ranked 1.8 with 1.0 being perfectly correlated and 8.0 being diametrically opposed. There were only two of the fifteen participants where the predicted octant was not selected in the high importance ranking[4].

Cluster 2 – Consensus Building and Government Distrust Dominate. Cluster 2, although smaller (seven participants), was similar to cluster 1 in being spread out over multiple regions and stakeholder classes. This cluster included one operator that has been operating for many years (family business for several generations). Cluster 2 covers the Illinois River basin with the exception of the Upper Tenkiller Lake region.

Some general observations of cluster 2 stakeholder participants can be made. Consensus building is required to overcome recent negative media associated with many of the stakeholder classes represented in cluster 2. The media has reported some items as facts that in reality are not. Consensus building efforts would work to verify facts and clarify misinterpretations of supposed facts, resulting in more agreement on what is relevant.

Participants of cluster 2 feel that the federal government is mixed in technical competency, which means they are not incompetent, but are not judged as competent either. The federal government is perceived to have a fairly different value set from stakeholder participants and as a result are judged as fairly untrustworthy.

Cluster 2 participants rank federal government trust lower than the other two clusters. State government is deemed not as competent (but fairly close) as the federal government. State government is perceived to have more, albeit not much more, shared values with stakeholder participants for the same reason found in cluster 1 (closer to the problem and being representatives of the state, therefore, having more items of concern in common). Accordingly, state government is viewed slightly more trustworthy than the federal government.

Independent experts are judged technically competent due to training in river basin management, which should be their passion. Experts are ranked high in the level of values shared with stakeholder participants. This combination causes experts to be trusted more highly than any other stakeholder or group.

Stakeholder participants' rankings show a level of value sharing with other stakeholders lower than with experts. Stakeholders are ranked fairly high in technical competence due to their knowledge about local impacts. Due to these areas being marked generally lower for other stakeholders than for experts, other stakeholders are trusted less. Even with this result, stakeholders are still ranked as "more trustworthy" than government.

The rankings of fact salience, fact certainty, value salience, and stakeholder agreement are similar to those found in clusters 1 and 3. These results have the same implications for influence with facts and values as was argued previously in cluster 1's discussion. That is, even though values are ranked lower than facts, because they are ranked as salient, they take precedence

over fact salience. Facts cannot be ignored, but they take a subordinate role. Of the three clusters, facts have their lowest relevance in cluster 2.

Overall data analysis showed that cluster 2's participants feel their views about consensus building and a lack of trust in the government should be the predominant focus of decision-making. Cards (management strategies) with a theme of "no government trust" displayed complete dominion over the cluster in the form of all seven participants selecting no trust strategies, as was predicted by the model. Consensus building was of concern with six of the seven selecting conflict based strategies from the concordance-conflict trust dimension. The seventh did, however, select a consensus building strategy when deciding his preferred option. The final aspect of importance in decision-making for cluster 2 participants is values (predicted by six of seven). Values ranked slightly inferior to the dimension of consensus building. People in this cluster have been around the river most of their lives and witnessed how government tried to "run their lives" when the problem between the basin populace and Fayetteville, Arkansas occurred in the 1980's. Cluster 2 participants also know that "getting the people together" is mandatory if anything positive for the river basin and its residents is to be accomplished.

The correlation of predicted strategy to preferred strategy is extremely high. Cluster 2 ranked 1.3, with 1.0 being perfectly correlated and 8.0 being diametrically opposed. All predicted octants ranked high, with 6 of the 7 being their top choice. This cluster has the best correlation with the model.

Cluster 3 – Consensus-Building Dominates. Like the previous 2 clusters, cluster 3 is fairly spread out across regions and stakeholder classes. Cluster 3 contained 14 participants. Included was one float trip outfitter that purchased the operation a few months prior to the interview. Similar to the outfitter discussed in Cluster 1, this outfitter was not present for the problems from the early 1980s with Fayetteville, Arkansas. The bulk of cluster 3's makeup primarily comes from the portion of the Illinois River basin that extends from Chewy Bridge to the Highway 51 bridge (region 2). Region 2 has the heaviest concentration of float trip outfitters. Other areas of the river are represented, but superficially. No representation in this cluster is found from Flint Creek or from stakeholders located outside the Illinois River Basin.

Some general observations of cluster 3 stakeholder participants are apparent. Stakeholder participants feel experts are competent and have many values in common. With this result, experts are judged as fairly trustworthy. Stakeholders have a level of shared values with the participants similar to that of experts, but their competence is lower, therefore, the stakeholders are viewed not as trustworthy as experts. State government has the same level of competence as stakeholders but fewer shared values. The result is trustworthiness similar to that of stakeholders. Federal government is judged the least trusted entity. A reason for low trust is the judgment that federal government is the least competent and having the fewest shared values of any of the groups.

Overall data analysis shows cluster 3 has consensus building as the primary concern. Consensus building strategies were evident by card rankings of octant importance where consensus building was prevalent. Interestingly, only nine of the 14 participants had Likert scale data predicting this result. In the preferred strategy card sort, all participants selected a consensus building strategy as their preferred course of action. The results correspond to the overall data analysis for cluster 3, but differ slightly in correlation with predictions made from Likert scale data. Lack of trust in government was second in importance with values predicted to come in third. When participants ranked strategy preference, facts edged out values by a small margin. Cluster 3 had an inversely proportional trend when comparing the predictions based on Likert scale data to actual strategy selections.

The overall correlation of predicted strategy to preferred strategy is moderate to high. Cluster 3 ranked 3.3, with 1.0 being perfectly correlated and 8.0 being diametrically opposed. Seven of the fourteen cluster 3 participants had the predicted strategy ranked of moderate importance.

With the large variation in the predicted strategy versus the selected strategy for cluster 3 (See Appendix H – Summary of Raw Data), some explanation is in order. These descriptions are as follows:

- 006RAB4 – Controversy was highly selected over concordance in contrast to the Likert scale predictions. The participant commented during the interview that people would be in disagreement rather than concordance. It is the interviewer's opinion

that the participant ranked the concordance-conflict scale too far toward concordance. This opinion is based on the interview since the Likert scale result was not questioned. If the Likert scale data were corrected, the model would be better supported for this participant. Fact-based strategies were ranked high because educational programs help the stakeholders reach a consensus; i.e. people would be brought in line with the participant's views once they are enlightened by the facts. This consensus would be based on the people (now driven by values) determining which facts are relevant. Only then could a policy based on these facts be adopted.

- 016RTN – Both fact-based, consensus building strategies (IIA and IIB) are ranked high, showing the importance of consensus building and of facts, even though fact certainty is mixed. IIIA is ranked over IIIB because of the comment that "we are *forced* to trust the government," because they are the only ones who can make things happen, even if we don't fully trust them. IVB was selected over IIIB because IVB asked for public input and the participant commented that people should be asked their opinion before any decision is made. In retrospect, the implications associated with the cards were not fully understood by the participant.
- 018CRT1 – The fact-based, consensus building strategies (IIA and IIB) were selected above the predicted IVA, showing government trust is high (state) and facts are of high importance to this participant. Even though fact salience and value salience ranked mixed, the total fact certainty show an emphasis for facts that was reflected in the card sort.
- 023CRT1 – Fact-based, consensus building strategies were selected over the strategy predicted by the Likert scale data – IIIB. This result can be accounted for in several ways. The participant believes facts are very important. He ranked all facts as salient and certain. In addition, he ranked all values as salient. He stated that "many of the decisions and comments made about the river have come from people speaking their opinion without backing it up with facts." If people knew the facts, they would come into line with his way of thinking. The facts, in his opinion, support his

values and viewpoint. The participant also stated that local agencies are too close to the issue and federal agencies are too far. The IIA strategy comes about if a state agency is involved and if the agency takes the time to find the facts. The agency must become educated about the issue from all sides. The participant feels that if the state agency accomplishes this feat, their decision would fall within the value set for the stakeholders. Additionally, a consensus building strategy was selected because the level of stakeholder agreement is not as high as is should. If the previously mentioned actions were abided by, consensus would increase significantly. The participant, after ranking the two fact-based strategies described above, departed from the conflict thread and selected value-based, concordance-exists (IVA and IVB) strategies next in order of importance. A comment was made that enough concordance exists to make these strategies viable options. Because of his median stance on many of the issues, the model did not work as well for this participant. The break-over points (where to send a middle rank for a bi-directional scale) could be tweaked to account for this. Another accounting method is to redefine the scales. An example would be facts and values in opposition on the same scale (a new Likert scale placed after the three fact-value scales that are presently utilized).

- 024LSR7 – The main deviation for this participant's results is IIA was ranked over IIIA, even though these were about equal to the participant. Both values and facts are important in the decision making process, predicting IIIA over IIA. According to this participant, if stakeholders "knew all the facts instead of the ones that they want to know," the stakeholders' way of thinking, would be like his. This result shows that facts play a vital role in shaping the peoples' values. The participant stated that in order for people to agree on anything, they would need to be educated on the issues. IIA has a focus on education, an area of importance to the participant. Government-trust octants were selected over the distrust octants. Even though government (federal) is not widely trusted, they had a level of trust nearly the same as experts

and higher than state government and stakeholders. The participant stated that "the federal is the one who would have to make things happen" so the federal government was placed near the top of the trust list (even though federal government trust was not high).

- 025SXX7 – The rankings of this participant are in direct opposition to the predictions. The ranking of strategies show consensus building as the primary concern. Other concerns are facts rather than values, and a lack of government trust. Based on the conversation with this participant, no matter what you do, opposition will come from someone. For this reason, consensus building strategies are needed. Consensus building strategies will move people as close together (or keep them close together if they are already there) in thinking as possible. Consensus building should always be of primary concern no matter how much agreement is present on an issue. The feeling that participants are being bullied would be reduced if people were in concordance. Values are selected over facts in the Likert scales because the participant had not evaluated many studies on the river. Proper evaluation would be required by this participant in order to have a foundation in fact to make any decisions; almost all his information has been gained from one-on-one discussions with stakeholders. According to this participant, facts would be the preferred basis for decisions, but at present we don't have the luxury of using facts, so we must use values. The participant, indicating he would feel comfortable with either entity in the policy planning process, similarly ranked experts and government. Perhaps by using experts, the public would not feel that the government is trying to ram something down their throats. Federal government would be the primary figure in control when the river crosses boundaries between states. The participant ranked the Likert scales as he observes conditions now. In contrast, he ranked the strategy preferences how he would like to see conditions eventually result. This should have been explored further, but the participant's schedule was very tight and time did not permit follow-up.

- 036TRX3 – Octants IIA and IIB were ranked high due to the participant's strong convictions about needing factual data. He stated that technical data should be given the "highest level of confidence." IVB was selected high because the people were asked for input and any policy will reflect the input. The participant likes the idea of government asking for input, but failed to realize that IVB predicts a coercive based strategy. The participant stated that if people felt that a decision is "not a case of one group, such as environmentalists, forcing their agenda on everyone else," the process would progress more smoothly. IIIB should have been selected over IVB, due to the participant's statement that there will always be conflict and IVB doesn't reflect conflict. The participant was uncomfortable with public meetings reflecting the views only of those who were present. He failed to realize that only the people directly questioned in his preferred strategy, IVB (few questioned due to existing concordance) would be the ones to express their views. Less of the public would be represented if his preferred strategy were utilized. Consensus building should influence what strategy this participant prefers. A large part of the problem of not "fitting" with the model rests with misinterpretation of the content found in the strategy preferences written on the cards.

Across Octants

Two clusters were produced from the analysis of the octants. The first cluster included octants IA, IB, and IVA, which were the octants least selected. The primary reason for exclusion was their lack of public involvement. The second cluster included octants IIA, IIB, IIIA, IVB, and IIIB. These five octants incorporated discussion, education, and public input. IVB was included due to its emphasis on finding what the public wants, but is still a coercive form of policy implementation. Compliance is forced once the government finds out what the people want. The participants' desires are determined from talking to just a few stakeholders (since concordance is present already).

The overall IRB participant predicted management strategy (model octant IIIB) corresponds to the IRB participant preferred management strategy. IIIB was selected because of the general perception that:

- Values dominate, therefore, deliberative procedures are appropriate;
- Social controversy exists, therefore, persuasive approaches are appropriate;
- Trust of government's ability is low, therefore, deference cannot be expected;

For this reason, non-governmental parties must facilitate transformation of controversy and uncertainty into consensus and certainty.

Theoretical Discussion

Theories of trust in public participation vary widely in their approaches. Three primary dimensions of trust appear in the literature: value/facts, consensus building, and governmental trust. Variants of these three dimensions are found, but can be related back to one of the three primary dimensions. The three dimensions of trust are usually dealt with individually or in pairs throughout studies of trust. A few studies look at all three. The trust model evaluated in this study utilizes these three dimensions of trust to develop a prescriptive solution to trust policy decision making.

The results of the study correspond with much of the theory found in the literature. Several authors had a singular focus of using values to make a personal evaluation of which risks to accept and which risks to avoid (Luhmann 1988; Mitchell 1992; Slovic 1993). Values are viewed as a dominant aspect of trust. This value dominance corresponds to the IRB participants' value-based decision preference of the fact-value dimension found in the model. A singular focus of consensus building was expressed through stakeholder involvement in management decisions (Leiss 1995). Shapiro (1987) expressed that institutional agencies can bridge relevant pasts together and focus on future contingencies to build consensus and foster cooperation between all parties. Laird (1989) also had a singular focus stating that distrust of government exists. Consensus building was selected as the dominant viewpoint of the concordance-conflict dimension of the trust model and distrust of government was selected dominant for the

government trust-distrust dimension. Both of these results match the theory found in the literature when the author had a singular focus. When these theoretical works are combined orthogonally, the theoretical views match the strategies predicted from the model and selected by the participants.

Several studies had a dual focus pertaining to the trust dimensions. This focus would take one of three forms: fact-value and government trust-distrust; fact-value and consensus building; or consensus building and government trust-distrust. Interestingly, the third pair of dimensions (consensus building and government trust-distrust) had no representation in the literature but was an area of importance for participant cluster 2. The literature with a dual focus always had a fact-value dimension, emphasizing the salience of this dimension.

The authors focusing on a fact-value and government trust-distrust pairing are discussed first, taking each dimension into consideration separately.

The fact-value focus had one line of fact-based thought in the form of technical competence (Barber 1983; Wynne 1996), showing the importance of facts in decision making. The remainder of the fact-value dimension was focused on values, indicating the dominance of values. Some lines of thought that relate to values are fiduciary responsibilities of concern, caring, and empathy (Barber 1983; Kasperson 1986; Covello 1992; Peters, Covello, and McCallum 1997), dedication and commitment (Covello 1992), and being honest and open (Peters, Covello, and McCallum 1997). The emphasis of values in the literature corresponds to the predictions made with the model and the decision making strategies selected by the participants.

The government trust-distrust focus found in the literature did not express trust nor did it express distrust of the government. The focus dealt with what it takes to have trust. The main aspect was technical competence (Barber 1983; Kasperson 1986; Covello 1992; Wynne 1996 Peters, Covello; and McCallum 1997) if deference to the government is ever to be granted. The government needs to be viewed as unbiased (Kasperson 1986), honest, and open (Covello 1992; Peters, Covello, and McCallum 1997).

Several lines of thought bridged the two dimensions (technical competence, honesty, and openness) showing that a relationship exists between the fact-value dimension and the

government trust-distrust dimensions. As a result, placement of the two into a single model is warranted, giving support from theory for this aspect of the trust model.

The authors focusing on a fact-value and consensus building pairing are discussed next, again taking each dimension into consideration separately.

With peoples' values included, the fact-value dimension can become an emotional dimension (Lewis and Weigert 1985). The facts and values are similar in importance for the authors who linked this dimension with consensus building. This result corresponds with fact-based strategies and value-based strategies ranking equally important in stakeholder cluster 3 (see cluster analysis). Stakeholder cluster 3 ranked consensus building the highest of the three clusters. Consensus must be built in order to make decisions on alternate futures. The various value sets should be assimilated and accepted (Earle and Cvetkovich 1995). Once value acceptance is accomplished, social norms will be able to generate a behavioral trust (Lewis and Weigert 1985), allowing for social cooperation and solidarity (Misztal 1996) and possible deference to the government.

Again several lines of thought bridge the two dimensions showing that a relationship exists *between the fact-value dimension and the consensus building dimensions*. The primary linking agent is Earle and Cvetkovich's (1995) idea of cosmopolitan trust (building consensus of values). For a second time, placement of the two into a single model is warranted, giving support from theory for the trust model. An additional inference can be drawn. If the fact-value dimension is associated with the government trust-distrust dimension and the fact-value dimensions is also associated with the consensus building dimensions, the government trust-distrust dimension should be associated with the consensus building dimension. All three dimensions are linked together into a three-dimensional trust model corresponding to the trust model evaluated in this study.

A few studies looked at all three trust dimensions in their discussions. Renn and Levine (1991), Kasperson, Golding, and Tuler (1992), Kramer and Tyler (1996), and Bradbury, Branch, and Focht (1999), like the previous authors (single and dual dimension analysis) focus on the value end of the trust-value dimension. These authors focus on what it takes to have trust,

instead of government trust or distrust. An underlying impression was evident: distrust of the government does exist. With one exception, the focus of the conflict-concordance dimension is conflict. Several methods for building consensus were explored in the authors' discussions. Renn and Levine (1991) proposed a view of concordance based on social norms, thus consensus is already built in their view. The predictions made with the model correspond to what is found in the literature, especially with the studies that incorporated all three dimensions. The studies evaluated each dimension separately, but through analysis, relations are evident linking all three together. The result if they were linked together in the literature would be a three-dimensional model of trust, the model evaluated in this study.

The overall theory from the literature is that values are important, consensus building is required, and government trust is a precariously balanced commodity with a trend toward distrust. This theory, IIIB – transformative policymaking, without deference, corresponds to the participants' rankings of decision making strategy importance found in Importance Cluster 2 (see cluster analysis). The literature corresponds to the participants' ranking of a preferred strategy as well. This preferred strategy is IIIB.

CHAPTER VI

IMPLICATIONS

Trust as a binary relationship between deference to the government and public participation in policy decision making may not be relevant in today's socially complex world. This study has demonstrated that three dimensions of trust: expert trust, social (stakeholder) trust, and government trust are all relevant to policy making. The IRB participants were clear in their preferences for transformative policymaking strategies (IIIB).

The results reveal how an IRB policymaking process should proceed. The process should include consensus building, require independent neutral party facilitation, and focus on incorporating stakeholders' values. This is transformative policymaking, without deference to government, which transforms controversy to consensus and uncertainty to certainty, and builds trust in experts, government, and fellow stakeholders.

However, two aspects of the model require further investigation. The first is the fact-value dimension. The Likert scale results predicted more reliance on value-based decisions than was evidenced in the analysis. Probable reasoning for the higher-than-expected support for fact-based decisions is that many of the participants believe that the facts support their personal values. Possible support is found in the Pearson's correlation data between fact salience and value salience, signifying the interaction between them. Similar correlation was found between value salience and competence of stakeholders, illustrating that social trust to implement fact-based decisions will support social values.

Another aspect of the model deserving attention is the conflict-concordance dimension. A coercive strategy appropriate to a wide spread consensus on a preferred course of action could be rejected if stakeholders are not involved in the decision making process. Apparently, even if concordance is present, the stakeholders "need" to have their voices heard, even if expressing the same sentiment. A reason for this is that the participants focused on consensus building; even though they believed that agreement already exists, participants stated that consensus

building should be a continuing process to preserve and improve it. The particular circumstances of a given context could also influence this dimension.

A region with a history of perceived prior governmental abuse might react differently than one that has no such history. The trust model would probably fit better in the latter context. However, with only eight participants included in this context, these results may be spurious. An intriguing question is: How would the model function if it predicted an overall basin strategy indicating concordance, and thus, minimal public input? Would the stakeholders follow the prescribed context or would they prefer to employ a consensus building strategy?

ENDNOTES

[1]The 1.8 is for octant IVB which has demonstrated some inconsistencies with card interpretation throughout the study.

[2]The critical value was calculated from the formula: 1.96 x $1/\sqrt{N}$ for the $p < 0.05$ significance level and 2.58 x $1/\sqrt{N}$ for the $p < 0.01$ significance level.

[3]The idea of removing the M rankings is due to the inability to retest these participants. Several reasons are evident for this need. Quite a few of the M's were early in the study before the interviewer was as ease with the interviewing techniques. Also several of the M's were people with tight schedules. This situation did not allow time for retrospect on the results and questioning for clarification, both for their answers and to make sure they understood the true meaning behind the cards.

[4]It is notable that neither of these were ranked of low importance. Upon questioning one of the participants of this result, he explained his reasoning for selecting a strategy that did not fit what was predicted. He stated that if 'real science' were used to find the facts, instead of looking for what they want to find, the facts would be of primary importance. He also felt that some concordance exists, but there should be more. He declared that we should work together to get people in agreement. It is obvious from his statements that he ranked the concordance scale too high He also sorted the cards as if it was what he wanted, i.e., 'real scientific facts' where as he evaluated the Likert scales as issues are now. If these items were corrected and/or accounted for, his views would fall in line with the model. Both of these items were not questioned due to the limited time allowed for the interview.

The other participant who selected an octant not ranked as highly important stated that he didn't want state (from Oklahoma City) or federal supervision. Even though the participant selected trust in the government in his Likert scales, his card sort suggests distrust. He wants local state government (Oklahoma Scenic Rivers Commission) to be in control of what happens and the cards did not reflect local control (local was associated with experts). He is also

concerned with government controlled meetings being orchestrated, that is government looking for what it wants to find. He liked IVB in that the policy is based on seeking input from the people. He also liked IIIB in that the government functions as an equal stakeholder. Even though he trusts the government, they should have no more say than the stakeholders if they are going to get people to come to an agreement. Any other format and it looks like the government is forcing them into something they might not want. This view is one of the reasons IIA and IIB are ranked more highly than IIIA. Another is that the participant feels that factual data should be one of the primary sources for creating any policy. These data are needed to show why the policy functions in the way it does.

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APPENDIXES

APPENDIX A

LETTER OF INTRODUCTION

OKLAHOMA STATE UNIVERSITY

OSU

College of Arts and Sciences
Department of Political Science
519 Mathematical Sciences
Stillwater, Oklahoma 74078-1060
405-744-5569

March 23, 1998

Dear Sir/Madam,

Oklahoma State University, in cooperation with the University of Oklahoma in Norman and the University of Oklahoma Health Sciences Center in Oklahoma City, is conducting a research study of people's views and opinions concerning the management of impacts to the Illinois River Basin. You have been chosen because you have been recognized as a person who is concerned about these issues.

To help us conduct this research, four students were specially trained to conduct personal interviews: Charlie Peaden, Medea Langdon, David Allen, and Todd DeShong. Each student has in his or her possession a validated Oklahoma State University identification card with his or her picture on it that have shown you. The interviews should last two to three hours and will require nothing from you other than your opinions and answers to questions that we would like to ask you about the Illinois River Basin.

If you have any questions or concerns about these interviews that you would like to discuss with me directly, please feel free to call me at 405-744-5642.

Thank you for your participation in this study. Your opinions are essential to the success of this project and are very much appreciated.

Sincerely,

Will Focht

Will Focht, Ph.D
Assistant Professor

Bringing Dreams to Life

APPENDIX B

INFORMED CONSENT STATEMENT

INFORMED CONSENT STATEMENT

The purpose of this research is to examine stakeholders' thoughts and feelings about the Illinois River Basin and how impacts to the basin should be managed. You are being asked to participate in this study because you were identified as a person who has a stake in the future of the Illinois River Basin and because you have important views and opinions about how the basin should be managed.

First, you will be asked to complete a short questionnaire about yourself and your ties to the Illinois River Basin.

Second, you will be asked to freely describe your thoughts and feelings about the Illinois River Basin, your judgment of the physical, biological, economic, social and political impacts that are or may be occurring, and of your preferences for how these impacts should be managed.

Third, you will be asked to give your opinion about the trustworthiness of government agencies, technical experts, and other stakeholders. This will involve your marking your judgment on lines that represent scales of trustworthiness and related criteria from low to high. You then will be asked to arrange eight policymaking strategies that could be used to make river basin management decisions. This involves reading the cards and then arranging the cards in order of your preference for them – from least preferred to most preferred.

Fourth, the interviewer will lead you through a cognitive mapping exercise in which he or she will ask you about the specific river basin impacts you are concerned about and how these impacts should be managed. You will be asked to write these impact concerns and management preferences on cards and then arrange the cards in a manner which best reflects your view of them. You will also be asked your opinion about how the specific impacts you identified in the map can best be managed.

Finally, you may be asked to participate in a one-hour follow-up interview to be conducted in a few weeks in a Q sorting exercise. In this interview, you will be asked to sort statements made about the Illinois River Basin by yourself and others. We will later analyze these sorts to determine the perspectives that are held in common in the Illinois River Basin stakeholder community regarding impacts and impact management strategies. Based on the results of the Q sorting exercises, the research team will ask some of the stakeholders to participate in one or more group sessions to discuss impact management alternatives.

If you have any questions, you may contact Dr. Will Focht, project director, at (405) 744-5642. You may also contact Gay Clarkson, IRB Executive Secretary, 305 Whitehurst, Oklahoma State University, Stillwater, OK 74078; telephone number (405) 744-5700.

It is important that you understand the following guidelines:

1. Your participation in this research is voluntary. You may stop at any time.
2. The information we collect in this study will be held in strict confidence and all participants will remain anonymous to anyone outside of the research team.

Signature of Interviewer _____ Date _____

3. Our research focuses on how people, in general, express concerns about impacts to the Illinois River Basin. We are not interested in any one individual's responses. Rather, we will be studying only information grouped across of people.

I have read and fully understand the consent form. I sign it freely and voluntarily. A copy has been given to me.

Signature of Research Participant _____ Date _____

APPENDIX C

PARTICIPANT DEMOGRAPHIC QUESTIONNAIRE

Participant Number IRB - ___ - ____ - ____

QUESTIONNAIRE

The following 21 questions concern facts about yourself and your relationships and interests in the Illinois River Basin.

1 Gender

[ ] Male [ ] Female

2. Race

[ ] White [ ] African-American [ ] Native American [ ] Hispanic
[ ] Asian-American [ ] Other (specify) _____

3. Age

[ ] 15-19 [ ] 20-24 [ ] 25-29 [ ] 30-34 [ ] 35-39 [ ] 40-44 [ ] 45-49
[ ] 50-54 [ ] 55-59 [ ] 60-64 [ ] 65-69 [ ] 70-74 [ ] 75-79 [ ] 80+

4. Highest level of formal education

[ ] Less than H.S [ ] High school [ ] Trade school [ ] Some college
[ ] Bachelor's [ ] Some grad [ ] Master's [ ] Doctoral/Professional

5 Occupation (specify) _____

6. Household annual income

[ ] Less than $10K [ ] $10K-$19,999 [ ] $20K-$29,999 [ ] $30K-$39,999
[ ] $40K-$49,000 [ ] $50K-$59,999 [ ] $60K-$69,999 [ ] $70K-$79,999
[ ] $80K-89,999 [ ] $90K-$99,999 [ ] $100K-$125K [ ] $125K-$150K
[ ] $150K+

7. Residence type

[ ] Own home [ ] Rent [ ] Live with parents, relatives, or friends rent-free

8. Residence location

[ ] Live in this study area
[ ] Live in the Illinois River Basin, but not in this study area
[ ] Do not live in Illinois River Basin
If you do not live in the Illinois River Basin, in what town do you live?
_____

9. Land ownership

[ ] Own land in this study area
[ ] Own land in the Illinois River Basin, but not in this study area
[ ] Do not own land in the Illinois River Basin

10. Business interest in the Illinois River Basin

[ ] No business interest in the Illinois River Basin
[ ] Own and operate a business (proprietor)
[ ] Invested in a business, but not an owner/operator (e.g., stockholder)
[ ] Work at a business, but not invested in it (employee)

11. Your current length of residence in the Illinois River Basin

[ ] Not a current resident
[ ] Less than one year
[ ] More than one year (specify) _____

12. Your former length of residence in the Illinois River Basin (if you had moved away)

[ ] Not a former resident
[ ] Less than one year
[ ] More than one year (specify) _____

13. Your current length of residence in this study area

[ ] Not a current resident
[ ] Less than one year
[ ] More than one year (specify) _____

14. Your length of residence in the this study area (if you had moved away)

[ ] Not a former resident
[ ] Less than one year
[ ] More than one year (specify) _____

15. Length of residence in the Illinois River Basin by your family

[ ] Same as my residence
[ ] Longer than my residence (specify) _____

16 Length of residence in the study area by your family

[ ] Same as my residence
[ ] Longer than my residence (specify) _____

17 Other than residence or land ownership, what relationship do you have with this study area?

[ ] A member of my family lives/lived in the area.
[ ] I or a member of my family attended/attends school in the area
[ ] I work in the area.
[ ] I recreate in the area (specify) _____
[ ] Other (specify) _____

18. From what sources do you get information about impacts to the Illinois River Basin? CHECK ALL THAT APPLY

[ ] News media
[ ] Friends and neighbors
[ ] Industry and/or businesses
[ ] Fellow workers at my place of employment
[ ] Environmental interest groups
[ ] A citizens group (specify) _____
[ ] State government agency (specify) _____
[ ] Local government agency (specify) _____
[ ] Other (specify) _____

19. If you checked more than one source in Question #17, which one is the source that you get most of your information concerning Illinois River Basin impacts?

_____

20. Which of the sources listed in Question #17 do you most rely on and trust? LIST TOP 3 IN ORDER.

Most Important: _____
Second Most Important: _____
Third Most Important: _____
Why? (Explain these choices) _____
_____
_____

21 Which of the sources listed in Question #17 do you least rely on and trust? LIST BOTTOM 3 IN ORDER.

Least Important: _____
Next to Least Important: _____
Third Least Important: _____
Why? (Explain these choices) _____
_____
_____

22. How would you describe your involvement with river basin issues to date? CHECK ALL THAT APPLY
    [ ] No involvement whatsoever
    [ ] I have not actively involved myself, but I paid close attention to the issues
    [ ] I signed a petition
    [ ] I contacted a government official
    [ ] I attended a meeting of concerned citizens
    [ ] I spoke at a meeting of concerned citizens
    [ ] I helped organize a meeting of concerned citizens
    [ ] I attended a government meeting or public hearing
    [ ] I testified at a government meeting or public hearing
    [ ] I participated in a rally or demonstration
    [ ] I helped organize a rally or demonstration
    [ ] Other (specify) _____

23. How often would you say you have you been involved in the activities listed in Question #20?

    [ ] Never [ ] Seldom [ ] Occasionally [ ] Frequently [ ] Continuously

APPENDIX D

LIKERT SCALES

LIKERT SCALES

Circle the number on the line that best reflects your opinion about the issue that is written above the line. Remember that these issues concern the proper management of current and potential future impacts to the Illinois River Basin. The interviewer will provide additional instruction.

Relevance and Importance of facts

4_____3_____2_____1_____0_____1_____2_____3_____4 [DK]

No facts are relevant and important — All facts are relevant and important

Certainty of facts

4_____3_____2_____1_____0_____1_____2_____3_____4 [DK] [NA]

No facts are certain — All facts are certain

Relevance and importance of values

4_____3_____2_____1_____0_____1_____2_____3_____4 [DK]

No values are relevant and important — All values are relevant and important

Level of stakeholder agreement on a preferred policy

4_____3_____2_____1_____0_____1_____2_____3_____4 [DK]

Total Disagreement (Controversy) — Total Agreement (Concordance)

Technical competence of federal government officials

4_____3_____2_____1_____0_____1_____2_____3_____4 [DK]

Totally Incompetent — Totally Competent

Values of federal government officials

4_____3_____2_____1_____0_____1_____2_____3_____4 [DK]

Different values from me — Identical values to me

Trustworthiness of federal government officials

4_____3_____2_____1_____0_____1_____2_____3_____4 [DK]

Completely Untrustworthy — Completely Trustworthy

Technical competence of state government officials

4 3 2 1 0 1 2 3 4 [DK]
Totally Incompetent — Totally Competent

Values of state government officials

4 3 2 1 0 1 2 3 4 [DK]
Different values from me — Identical values to me

Trustworthiness of state government officials

4 3 2 1 0 1 2 3 4 [DK]
Completely Untrustworthy — Completely Trustworthy

Technical competence of experts

4 3 2 1 0 1 2 3 4 [DK]
Totally Incompetent — Totally Competent

Values of experts

4 3 2 1 0 1 2 3 4 [DK] [NA]
Different values from me — Identical values to me

Trustworthiness of experts

4 3 2 1 0 1 2 3 4 [DK]
Completely Untrustworthy — Completely Trustworthy

Technical competence of stakeholders

4 3 2 1 0 1 2 3 4 [DK]
Totally Incompetent — Totally Competent

Values of stakeholders

4 3 2 1 0 1 2 3 4 [DK]
Different values from me — Identical values to me

Trustworthiness of stakeholders

4 3 2 1 0 1 2 3 4 [DK]
Completely Untrustworthy — Completely Trustworthy

APPENDIX E

CARD SORT CARD INFORMATION

IA Government experts develop a river basin management policy, based on the scientific facts, with little, if any, public input.	IB Independent experts recommend a river basin management policy based on scientific facts to the appropriate government agency, which then adopts the policy recommendation, with little, if any, public input.
IIA Government experts develop a river basin management policy, with little, if any, public input, but only if an education program produces substantial public agreement on the relevant scientific facts.	IIB Independent experts recommend a river basin management policy based on scientific facts, but only if an education program produces substantial agreement on the facts. The government agency then adopts the policy recommendation with little, if any, public input.
IIIA Trained government mediators facilitate public meetings that allow citizens ample opportunities to discuss and debate various river basin management policies. Any agreement on a policy reached at these meetings is adopted by the government.	IIIB Trained independent mediators facilitate public meetings that allow citizens ample opportunities to discuss and debate various river basin management policies. Government officials participate in the meetings on an equal basis with other participants. Any agreement on a policy reached at these meetings is adopted by the government.
IVA Government drafts river basin management policy based on what it understands is the citizens' preference. Government then must verify that the policy does in fact reflect the citizens' preference before it can be adopted.	IVB First, the government finds out what river basin management policy citizens prefer. Then, the government adopts the policy that reflects the citizens' preference.

APPENDIX F

CARD SORT DOCUMENTATION SHEET

CARD RANKING SCORE SHEET

Date. _____

Participant ID*: IRB -___ - ____ - ____ Interviewer _____

PREFERENCE RANK ORDER	RELATIVE IMPORTANCE (H, M, L)	OCTANT NUMBER (IA, IB, IIA, IIB, IIIA, IIIB, IVA, IVB)
1		
2		
3		
4		
5		
6		
7		
8		

** Stakeholder ID Key:*

First entry is regional stakeholder group identification code.

1. Upper Illinois from Arkansas state line to Chewy Bridge
2. Middle Illinois from Chewy Bridge to Highway 51 Bridge
3. Lower Illinois from Highway 51 Bridge to Etta Bend
4. Baron Fork Creek from Arkansas state line to Illinois River confluence
5. Upper Lake Tenkiller from Etta Bend to Cherokee Landing
6. Stakeholders from outside the Illinois River Basin
7. Policymakers (federal and state: these are not tied to a region; plus local)

Second entry is stakeholder class identification code (*add other codes as appropriate*):

R = Resident (landowner and renter)
O = Outfitter
A = Ag
C = Concentrated Animal Feeding Operation
T = Tourist (recreationist)
N = Nursery
B = Business (retail: hotels, restaurants, grocery stores, and other retail establishments)
E = Environmental group member
F = Forester

Third entry is sequence number, beginning with "1"

APPENDIX G

CLUSTER RAW DATA

Cluster 1

R	Cl	Cl2	Cl3	Cxt	SP	#
2	R	A	T	IIIB	H2	1
2	O	R	T	IIIB	H1	4
2	A	R	T	IIIA	H2	5
1	R	B	T	IVA	H1	7
1	R	T	X	IVB	H2	8
8	B	R	O	IIIB	H1	10
4	R	B	C	IIIA	H1	14
5	B	R	T	IIIB	H1	15
8	R	X	X	IIB	H3	20
7	L	R	T	IIIB	H1	26
6	B	T	X	IIIB	H2	27
8	R	A	C	IVB	H1	29
6	E	T	X	IIIA	M5	30
7	Y	T	X	IVB	M3	38
3	F	R	T	IIIB	H1	39

Cluster 2

R	Cl	Cl2	Cl3	Cxt	SP	#
4	B	R	O	IVB	H3	11
3	E	R	G	IIIB	H1	12
1	R	O	C	IIIB	H1	19
6	T	X	X	IIB	H1	28
2	O	R	T	IIIB	H1	31
8	C	R	T	IIIB	H1	33
6	T	X	X	IIIB	H1	34

Cluster 3

R	Cl	Cl2	Cl3	Cxt	SP	#
2	O	R	T	IIIA	H1	2
2	R	A	B	IVB	M5	6
4	B	R	T	IIB	H1	13
5	R	T	N	IIIB	M5	16
2	B	R	X	IVB	H2	17
1	C	R	T	IVA	M3	18
2	R	T	B	IIIB	H3	22
1	C	R	T	IIIB	M5	23
7	L	S	R	IIIB	M4	24
7	S	X	X	IVA	M5	25
4	O	B	R	IIIB	H3	32
2	R	T	X	IIIB	H2	35
3	P	R	X	IIIB	M4	36
2	N	R	T	IVB	H3	37

Cluster Average Comparisons

Likert Scale Results

Clstr	FS	FCr	VS	C	FT	FC	FV	ST	SC	SV	ET	EC	EV	PT	PC	PV
1	8.2	7.3	7.7	5.3	5.8	6.7	5.1	5.7	6.3	5.7	7.1	7.5	6.7	7.0	5.7	6.7
2	8.3	7.3	7.4	5.3	4.6	5.6	3.9	4.9	5.3	5.1	7.4	8.0	7.9	6.7	6.6	6.9
3	8.2	7.0	7.7	5.9	5.0	5.5	5.0	6.0	6.0	5.4	6.6	7.2	6.6	6.0	6.0	6.5

	Card Rankings								Octant Importance								
Clstr	1A	1B	2A	2B	3A	3B	4A	4B	I1A	I1B	I2A	I2B	I3A	I3B	I4A	I4B	SP
1	7.3	7.0	5.0	3.9	3.0	1.9	4.9	2.9	2.9	2.9	2.2	1.9	1.6	1.2	2.2	1.4	1.8
2	5.4	4.0	5.0	2.0	4.7	1.1	7.4	6.3	2.7	2.4	2.3	1.4	2.3	1.0	3.0	2.3	1.3
3	6.9	6.8	1.7	2.0	4.1	4.1	6.2	4.1	2.9	2.9	1.1	1.1	2.1	1.9	2.8	1.9	3.3

R	Illinois River Basin Region
CI	Primary Stakeholder Classification
CI2	Secondary Stakeholder Classification
CI3	Tertiary Stakeholder Classification
Clstr	Cluster Number
FS	Fact Salience Dimension
FCr	Fact Certainty Dimension
VS	Value Salience Dimension
C	Level of Stakeholder Concordance
FT	Federal Trustworthiness Dimension
FC	Federal Competence Dimension
FV	Federal Values Dimension
ST	State Trustworthiness Dimension
SC	State Competence Dimension
SV	State Values Dimension
ET	Independent Expert Trustworthiness Dimension
EC	Independent Expert Competence Dimension
EV	Independent Expert Values Dimension
PT	Stakeholder Trustworthiness Dimension
PC	Stakeholder Competence Dimension
PV	Stakeholder Values Dimension
1A	Ranking for Octant IA
1B	Ranking for Octant IB
2A	Ranking for Octant IIA
2B	Ranking for Octant IIB
3A	Ranking for Octant IIIA
3B	Ranking for Octant IIIB
4A	Ranking for Octant IVA
4B	Ranking for Octant IVB
I1A	Ranking of Importance for Octant IA
I1B	Ranking of Importance for Octant IB
I2A	Ranking of Importance for Octant IIA
I2B	Ranking of Importance for Octant IIB
I3A	Ranking of Importance for Octant IIIA
I3B	Ranking of Importance for Octant IIIB
I4A	Ranking of Importance for Octant IVA
I4B	Ranking of Importance for Octant IVB
Cxt	Policy Strategy Predicted by Likert Scales
SP	Policy Strategy Selected by Stakeholder compared to Predicted
#	Interview number

APPENDIX H

SUMMARY OF RAW DATA

Summary of Data

R	Cl	FS	FC	VS	C	FT	FC	FV	ST	SC	SV	ET	ET	EV	PT	FC	PV	1A	1B	2A	2B	3A	3B	4A	4B	I1A	I1B	I2A	I2B	I3A	I3B	I4A	I4B	Cxt	SP	#
2	R	8	7	8	3	6	8	5	6	7	6	8	8	9	8	8	9	4	8	6	5	1	2	7	3	1	3	2	2	1	1	2	1	IIIB	H2	1
2	O	6	7	7	6	8	5	9	5	8	6	9	9	5	5	5	9	6	5	3	2	1	8	4	7	3	3	2	2	1	3	3	3	IIIA	H1	2
2	O	8	8	8	5	3	9	5	3	5	5	3	5	5	9	9	8	8	7	6	5	4	1	3	2	3	3	3	3	2	1	1	1	IIIB	H1	4
2	A	8	7	8	6	8	8	7	8	8	7	7	7	7	8	6	8	6	8	7	5	2	4	1	3	3	3	3	3	2	1	2	1	IIIA	H2	5
2	R	9	5	8	7	6	5	5	5	8	5	5	5	8	6	8	7	8	1	3	4	2	6	5	3	3	1	1	2	1	3	2	1	IVB	M5	6
1	R	9	9	9	8	7	6	6	7	7	8	6	7	7	7	7	8	8	7	6	5	4	3	1	2	3	3	2	2	2	1	1	1	IVA	H1	7
1	R	7	5	7	7	3	7	3	3	7	3	5	7	7	7	7	8	8	6	7	6	5	4	3	1	4	2	3	3	3	2	1	2	IVB	H2	8
8	B	9	9	9	3	1	3	5	3	5	7	5	3	3	3	7	6	4	3	2	1	4	2	3	1	8	5	3	3	2	1	1	3	IIIB	H1	10
4	B	9	8	8	9	3	4	4	7	3	7	8	9	9	8	8	6	5	7	2	4	1	8	8	3	3	3	3	3	1	2	1	1	IVB	H3	11
3	E	7	6	5	2	6	8	8	1	2	1	7	7	7	7	5	7	5	4	6	2	3	1	8	7	2	2	1	1	1	1	3	3	IIIB	H1	12
4	B	9	7	5	3	5	6	5	5	6	5	8	8	8	7	3	7	7	6	2	1	4	3	8	5	3	3	1	2	2	3	2	2	IIB	H1	13
4	R	8	9	8	3	8	8	8	8	8	8	9	8	8	8	8	8	8	6	5	7	1	4	2	3	3	3	3	2	1	2	1	1	IIIA	H1	14
5	B	8	9	8	5	7	4	4	8	7	7	9	7	7	5	2	6	8	7	5	4	3	1	6	2	3	3	2	2	2	1	3	1	IIIB	H1	15
5	R	9	5	9	5	5	5	5	5	5	5	8	9	8	5	7	8	8	6	2	1	3	5	7	4	3	2	1	1	1	2	3	2	IIIB	M5	16
2	B	8	8	8	9	2	5	4	5	2	2	4	5	5	5	5	8	7	7	3	1	5	4	6	2	3	1	1	2	2	3	1	1	IVB	H2	17
1	C	6	9	9	6	7	3	3	2	7	7	5	5	5	8	8	9	8	7	1	2	6	5	3	4	3	3	1	1	3	3	2	2	IVA	M3	18
1	R	8	9	9	9	6	5	5	1	6	5	5	8	8	5	7	5	7	2	5	3	6	1	8	4	3	1	2	2	3	1	3	2	IIIB	H1	19
8	R	9	9	9	5	2	4	8	2	4	6	5	8	7	7	3	5	7	8	4	3	5	1	6	2	3	3	2	1	2	1	3	1	IIB	H3	20
2	R	7	5	7	4	5	6	4	6	6	4	7	7	6	6	7	4	7	6	1	4	2	3	8	5	3	3	1	1	1	1	3	2	IIIB	H3	22
1	C	9	9	9	6	3	3	3	5	4	4	5	7	8	9	8	8	8	7	1	2	6	5	4	6	3	3	1	1	3	2	2	1	IIIB	M5	23
7	L	9	7	9	4	6	6	6	4	6	6	6	7	7	7	4	6	7	8	1	5	2	4	3	5	6	3	1	2	1	1	3	1	IIIB	M4	24
7	S	9	7	9	7	8	8	8	8	8	8	7	7	7	6	8	8	7	8	2	1	4	3	5	6	3	3	1	2	1	2	2	2	IVA	M5	25
7	L	9	6	6	6	7	3	7	2	3	2	7	6	7	7	2	6	6	7	5	2	3	1	6	4	3	3	3	2	2	1	3	2	IIIB	H1	26
6	B	9	5	9	5	8	8	5	5	5	9	9	9	5	7	8	7	8	6	4	1	3	2	7	5	3	3	1	1	1	1	3	2	IIIB	H2	27
6	T	8	8	6	4	5	5	5	6	7	6	8	9	8	5	5	5	4	3	6	1	5	2	8	7	2	2	3	1	2	1	3	3	IIB	H1	28
8	R	8	3	8	7	7	8	4	5	6	5	8	8	8	5	8	5	8	7	4	5	2	3	6	1	3	3	1	1	1	1	2	1	IVB	H1	29
6	E	8	7	7	6	8	7	7	9	8	9	8	9	8	7	6	6	7	8	3	4	5	1	6	2	3	3	2	2	2	1	3	1	IIIA	M5	30
2	O	9	6	8	4	2	6	2	2	6	4	7	7	7	6	7	6	7	6	3	5	2	4	1	7	3	3	3	2	3	1	3	3	IIIB	H1	31
4	O	8	8	8	6	3	7	7	5	6	7	6	8	8	8	8	8	6	4	6	7	1	2	5	3	8	4	3	1	1	2	3	2	IIIB	H3	32
8	C	9	9	9	6	7	5	5	6	7	7	8	8	8	8	8	8	4	6	3	2	7	1	5	8	3	3	1	1	3	1	3	3	IIIB	H1	33
6	T	8	5	7	6	2	4	2	6	7	7	8	7	7	8	7	7	6	5	3	2	4	1	7	8	3	3	2	2	2	1	3	3	IIIB	H1	34
2	R	9	7	7	5	5	5	5	6	6	6	7	8	8	8	7	7	5	5	8	7	3	1	5	2	6	4	8	3	2	1	3	3	IIIB	H2	35
3	P	9	7	9	5	6	7	5	7	7	5	6	7	8	5	6	4	5	5	7	1	2	6	4	8	3	2	3	1	3	2	3	2	IIIB	M4	36
2	N	8	7	7	8	5	6	6	5	5	6	7	8	8	7	8	8	5	6	2	1	4	7	8	3	3	1	3	3	3	1	3	1	IVB	H3	37
7	Y	6	8	7	7	6	6	5	8	7	8	7	7	5	6	7	5	7	8	6	1	5	2	4	3	3	3	3	1	3	1	2	2	IVB	M3	38
3	F	9	8	8	6	4	8	7	7	8	7	8	8	8	6	5	8	6	6	3	4	2	1	7	5	3	2	1	2	1	1	3	2	IIIB	H1	39
		8.2	7.2	7.6	5.5	5.3	6.0	4.8	5.7	6.0	5.5	7.0	7.5	6.9	6.6	6.0	6.6	6.8	6.3	3.7	2.8	3.8	2.6	5.9	4.1	2.9	2.8	1.8	1.5	1.9	1.4	2.6	1.8			

R	Illinois River Basin Region
CI	Primary Stakeholder Classification
FS	Fact Salience Dimension
FCr	Fact Certainty Dimension
VS	Value Salience Dimension
C	Level of Stakeholder Concordance
FT	Federal Trustworthiness Dimension
FC	Federal Competence Dimension
FV	Federal Values Dimension
ST	State Trustworthiness Dimension
SC	State Competence Dimension
SV	State Values Dimension
ET	Independent Expert Trustworthiness Dimension
EC	Independent Expert Competence Dimension
EV	Independent Expert Values Dimension
PT	Stakeholder Trustworthiness Dimension
PC	Stakeholder Competence Dimension
PV	Stakeholder Values Dimension
1A	Ranking for Octant IA
1B	Ranking for Octant IB
2A	Ranking for Octant IIA
2B	Ranking for Octant IIB
3A	Ranking for Octant IIIA
3B	Ranking for Octant IIIB
4A	Ranking for Octant IVA
4B	Ranking for Octant IVB
I1A	Ranking of Importance for Octant IA
I1B	Ranking of Importance for Octant IB
I2A	Ranking of Importance for Octant IIA
I2B	Ranking of Importance for Octant IIB
I3A	Ranking of Importance for Octant IIIA
I3B	Ranking of Importance for Octant IIIB
I4A	Ranking of Importance for Octant IVA
I4B	Ranking of Importance for Octant IVB
Cxt	Policy Strategy Predicted by Likert Scales
SP	Policy Strategy Selected by Stakeholder compared to Predicted
#	Interview number

APPENDIX I

INSTITUTIONAL REVIEW BOARD FORM

OKLAHOMA STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD
HUMAN SUBJECTS REVIEW

Date: 04-07-98 IRB #: BU-98-018

Proposal Title: ILLINOIS RIVER BASIN: SOCIOPOLITICAL ASSESSMENT AND POLICY DIALOGUE

Principal Investigator(s): Will Focht, Keith Willett, Lowell Caneday

Reviewed and Processed as: Expedited

Approval Status Recommended by Reviewer(s): Approved

ALL APPROVALS MAY BE SUBJECT TO REVIEW BY FULL INSTITUTIONAL REVIEW BOARD AT NEXT MEETING, AS WELL AS ARE SUBJECT TO MONITORING AT ANY TIME DURING THE APPROVAL PERIOD
APPROVAL STATUS PERIOD VALID FOR DATA COLLECTION FOR A ONE CALENDAR YEAR PERIOD AFTER WHICH A CONTINUATION OR RENEWAL REQUEST IS REQUIRED TO BE SUBMITTED FOR BOARD APPROVAL.
ANY MODIFICATIONS TO APPROVED PROJECT MUST ALSO BE SUBMITTED FOR APPROVAL.

Comments, Modifications/Conditions for Approval or Disapproval are as follows:

Signature

Chair of Institutional Review Board

Date: April 14, 1998

VITA

David Ehm Allen

Candidate for the Degree of

Master of Science

Thesis: TRUST AND POLICYMAKING LEGITIMACY: EMPIRICAL SUPPORT FOR A PRESCRIPTIVE MODEL

Major Field: Environmental Science

Biographical:

Personal Data: Born in Omaha, Nebraska, on June 24, 1966, the son of Joe and Kathleen Allen.

Education: Graduated from Warner High School, Warner, Oklahoma in May 1984; received Associate of Science degree in Biology from Connors State College, Warner, Oklahoma in May 1997 and Bachelor of Science Education, Biology Emphasis from Northeastern State University, Tahlequah, Oklahoma in December 1989. Completed the requirements for the Master of Science with a major in Environmental Science at Oklahoma State University in December, 1999.

Experience: Taught Science courses at Braggs High School, Braggs Oklahoma, and Hilldale Middle School, Muskogee, Oklahoma from 1990 to 1998. Employed as a mathematics and science facilitator at Oklahoma State University – Okmulgee, Okmulgee, Oklahoma from April 1998 to present.

Professional Memberships: Society of Manufacturing Engineers