Research Article

Stakeholder Trust in a State Wildlife Agency

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ABSTRACT Trust in science and government regulatory agencies (e.g., state wildlife agencies) is a growing issue among wildlife managers and administrators who are attempting to engage stakeholders and develop effective, public wildlife conservation. However, a paucity of research has investigated attributes affecting stakeholder trust in wildlife agencies. We proposed a theoretical model of 2 key factors that can affect levels of trust: procedural fairness and technical competency. We used structured equation modeling to examine the influence of these factors on trust in a state wildlife agency by a prominent wildlife stakeholder, licensed hunters ≥18 years old. We tested the model with results from a mail-back questionnaire ($n = 2,708$ respondents, 39.6% response rate) about trust in the Michigan Department of Natural Resources' Wildlife Division. The respondent population closely reflected Michigan's population of hunting license-holders regarding demographic and geographic composition. The modified measurement model fit the data well, supporting the uniqueness of the procedural fairness, technical competency, and trust measures. The test of the structural model indicted that stakeholder perceptions of procedural fairness and technical competence exhibited by agency personnel positively influenced trust; however, the coefficient for procedural fairness was nearly 4 times greater than that of perceived technical competence of personnel. Perceived congruency of values between stakeholders and the agency was the most important modifier of the relationship of fairness and competency on trust. Our findings identify influential pathways wildlife professionals generally and state wildlife agencies specifically can take to strengthen stakeholders' trust and confidence in their agencies. The complexity of public wildlife management ensures that there always will be factors affecting trust in state wildlife agencies for which agencies can do little about. Yet, development of decisions processes perceived by stakeholders to be fair and transparent and investment in agency personnel with skills in stakeholder engagement likely will be effective ways to foster trust and confidence in state wildlife agencies. © 2018 The Wildlife Society.

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Trust by stakeholders, in particular trust in governmental agencies, has been repeatedly identified as antecedent to effective governance and conservation (Stern and Baird 2015). Trust and confidence among stakeholders in state wildlife agencies (SWAs) has been considered necessary to achieve effective wildlife conservation from its early inception (Murie 1954, Smith et al. 2013*a*). Trust, in the context of wildlife management, is defined variously (Stern and Coleman 2015), yet a widely accepted definition is a willingness on the part of 1 entity (e.g., stakeholders) to accept being vulnerable to the discretionary actions of an organization (e.g., SWA) delegated to represent interests of its stakeholders (Hardin 1998, Möllering 2006, Pirson and Malhotra 2011). This type of trust, also termed relational trust and confidence or calculative trust (Earle 2010), is

referred to as organizational trust when the referent of trust is an organization (Pirson and Malhotra 2011).

Organizational trust is basic to collective actions such as public wildlife management because acting outside one's self-interest creates vulnerability from actions of the public trustee (Ostrom 1998). Distinctions between trust and confidence are debated (Earle and Siegrist 2006), yet researchers often include confidence in the definition of trust. For example, "Trust may be defined as a confidence in the reliability of a person or system..." (Giddens 1990:34). Confidence normally is distinguished as a belief based on experiences or other evidence that certain events will occur. Nonetheless, the 2 concepts are difficult to separate in practice (Earle and Siegrist 2008), and in this article we consider the 2 concepts together.

The need for trust and the subsequent turnover of power to the government as a trustee (e.g., SWA) is a deep-rooted concept in modern democracies (Fukuyama 1995, Warren 1999). In application to wildlife management, trust is critical in cases such as hunters' support for regulations (Schroeder

et al. 2017) and cooperation with policies such as a ban on feeding or baiting wildlife (Rudolph and Riley 2017). Although interests in wildlife and stakeholders of SWAs are more diversified than in the past, most decisions made by trustees (e.g., legislators, commissions, agency directors) are regulatory and typically focused on allocation issues such as season timing and length, characteristics of harvests (e.g., antler point restrictions), and bag limits that affect a narrow yet important set of stakeholders. Despite historically fluctuating levels of trust in government, science, and public administration (Nye et al. 1997, Chanley et al. 2000), current trends in wildlife management are moving toward collective action and participatory democracy rather than classically representative forms of governance (Rudolph et al. 2012). If these trends continue, organizational trust in SWAs will play an increasingly important role.

Trustees of wildlife in the United States are personified as state legislators, governors, or appointed state-level directors and commissions, who delegate management duties to trust managers such as personnel in an SWA (Smith 2011). Exceptions occur when wildlife are within the regulatory scope of the United States Constitution, in which case the federal government (e.g., Congress and the U.S. Fish and Wildlife Service Director) function as the principal trustee (Organ and Batcheller 2009). When management of public wildlife is delegated to an agency, that agency is empowered to create benefits related to wildlife, but by doing so may cause harm to resources or fail in some way to meet the expectations of some stakeholders while benefiting others. That is 1 reason why trust is an important issue in wildlife management; stakeholders are vulnerable to the actions of agencies in regard to wildlife (i.e., the corpus of the public trust) and the type and allocation of uses of wildlife sanctioned by trustees.

State wildlife agencies frequently accomplish objectives through regulations and laws sanctioned by power (i.e., trustees), yet such regulatory frameworks have limited effectiveness in the absence of stakeholder cooperation or compliance, which are rooted in trust of the regulatory agency (Gregory and McDaniels 2005, Rudolph and Riley 2017). Results from 26 focus groups with stakeholders of the Michigan Department of Natural Resources' Wildlife Division (DNRWD) that were used to inform strategic planning (Lauricella et al. 2017) revealed a pronounced desire by external stakeholders for more and better communication between the SWA and stakeholders. A frequent, piercing comment from hunters during the planning process was characterized as, "We don't trust the DNR!" One objective in the DNRWD strategic plan was to build trust and confidence in the agency (Michigan Department of Natural Resources 2016), which motivated our research.

A substantial body of research in myriad fields of natural resources management have revealed the effects of trust on stakeholder attitudes and behaviors. For example, organizational trust has been assessed with regard to stakeholder satisfaction and support for waterfowl regulations (Schroeder et al. 2017), antler point restrictions (Schroeder et al. 2014),

antlerless moose (*Alces alces*) hunting (Brinkman 2018), fishing regulations (Schroeder and Fulton 2017), re-establishment of moose in the Adirondacks (Lauber and Knuth 1999), risk perceptions related to chronic wasting disease (Needham and Vaske 2008), public willingness to engage in conservation planning (Smith et al. 2013b), willingness to participate in conservation activities (Davenport et al. 2007), and pro-environmental climate change-related behaviors (Wynveen and Sutton 2015). Although these studies stress various influences of organizational trust for relevant wildlife management outcomes such as stakeholder satisfaction or compliance with regulations, research on factors that affect trust in agencies charged with the governance of wildlife is lacking.

Based on research on organizational trust (Earle 2010, Moffat et al. 2015), 2 key factors are believed to influence stakeholder trust in an organization: procedural fairness (Pirson and Maholtra 2011) and technical competency (Poortinga and Pidgeon 2003). Competency in science and application of ecology long have been identified as professional qualifications to enhance wildlife research and management (Sinclair 1991), and are stressed in most university curricula in wildlife management (Baydack 2017) and conservation biology (Van Heezik and Seddon 2005). Procedural fairness, which encompasses perceptions of processes and procedures used by a decision-maker rather than the actual outcome of the decision, is recommended as an essential component of effective wildlife governance (Lauber and Knuth 1999, Decker et al. 2016, Rudolph and Riley 2017).

Moderation occurs when the strength of the relationship between procedural fairness or technical competency on the dependent variable of trust depends on value of the moderator (Baron and Kenny 1986, Hayes 2013). Value congruency perceived by stakeholders influences trust of wildlife agencies in such cases as management of threatened species in California (Cvetkovich and Winter 2003), prairie restoration in Illinois (Davenport et al. 2007), and containment of chronic wasting disease in Wisconsin and Colorado (Vaske et al. 2004, Needham and Vaske 2008). Other factors that may moderate the relationships of fairness (or technical competency) and trust include moral obligation of stakeholders to follow rules (Rudolph and Riley 2014), belief about the role of government (Nye et al. 1997, Cook and Gronke 2005), and extent of interactions with agency personnel (Smith et al. 2013a).

In this article, we provide a model to understand trust and confidence in DNRWD, Michigan's SWA, assess that model of stakeholder trust in SWAs, and suggest how trust can be fostered or eroded in wildlife management. Our objective was to determine whether perceived technical competency of SWA personnel or procedural fairness exhibited by the agency have a greater influence on organizational trust in an SWA. A secondary objective was to determine what other factors moderate relationships between technical competence, procedural fairness, and trust. We expected that for stakeholders who do not perceive congruent values with the SWA that the strength of the

relationship between procedural fairness and trust would be less, whereas the relationship would be greater for those who perceive high value congruence (Stern and Coleman 2015).

STUDY AREA

Michigan, noted for its upper and lower peninsulas, is located in the northcentral United States with a land area of 146,436 km^2. Michigan had an estimated human population of 9,883,000 (U.S. Census 2010) during our study of which 77% were white non-Hispanic or non-Latino and 49% male, with a population median age of 39 years. Human density and intensity of land use decrease generally south to north across the state (U.S. Census 2010, Michigan Department of Environmental Quality 2014). Nearly 75% of Michigan's human population lives in urban areas, concentrated in southern Michigan. The DNRWD had 4 administrative units in 2012, 1 each in the Upper Peninsula (UP), northern half of the Lower Peninsula (NLP), and in the southeast (SE) and southwest (SW) remainder of the Lower Peninsula. Michigan's population has the greatest proportion of licensed deer hunters in the United States and ranks third in number of resident deer hunters ≥16 years old (Aiken and Harris 2011). Approximately 778,000 people purchased hunting licenses in 2012, of which 90% were male and the median age was 42 years.

METHODS

Data Collection and Questionnaire Development

We drew a stratified random sample ($n = 7,200$) from the 2012 population of Michigan residents ≥18 years who purchased any type of hunting license. Although people enter the hunter population as early as 10 years of age, we excluded licensed hunters <18 to avoid minors and because we believed they must have some time as hunters to develop a sense of DNRWD as an entity. We stratified the sample according to 4 DNRWD administrative regions (1,800 surveys/region). After rectifying our sample contact list against the National Change of Address list, we mailed out 6,825 questionnaires (1,648 in UP, 1,698 in NLP, 1,725 in SW, and 1,754 in the SE). We implemented a modified tailored design-method (Dillman et al. 2009) 22 February–20 May 2013. We mailed questionnaires accompanied by a cover letter 22–26 February 2013. We sent a postcard thank you and reminder 7 days later. We sent replacement questionnaires accompanied by second cover letter on 1 April 2013, and a final thank you-reminder postcard on 15 April 2013. We conducted a telephone survey of non-respondents ($n = 159$), comprised of 6 questions from the mail-back questionnaire and discernment of respondent's age and sex on 28 May–10 June 2013. Our research methods were approved by Michigan State University's Committee on Research Involving Human Subjects (×12-1201e).

We developed 16 items to measure procedural fairness (8 items), technical competence (4 items), and trust and confidence (4 items) in the DNRWD. Another 4 items measured moderators previously reported to affect trust beliefs in similar situations: value congruence between questionnaire respondents and the DNRWD, moral obligation to follow rules, beliefs about the role of government, and levels and types of interactions with DNRWD personnel. We pilot-tested the final questionnaire with 5 Michigan State University graduate students from varied backgrounds, and made modifications to instructions and question structure based on their feedback. We asked survey respondents to indicate their level of disagreement or agreement using a 5-point Likert-type scale. We also asked respondents to report their gender and year of birth.

Analytical Approach

We analyzed the data from the questionnaire through structural equation modeling (SEM) using the statistical program of STATA 12 (StataCorp, College Station, TX, USA). Structural equation modeling is a statistical approach that allows for the examination of items, factors, and the predictive (theoretical) model together using the covariance structure (Kline 2005). Consistent with the recommendations by Anderson and Gerbing (1988), we employed a 2-step process in conducting the SEM by first testing the measurement model and then testing the structural (theoretical) model. The measurement model uses confirmatory factor analysis to determine the extent to which the analyses confirm that the questionnaire items written to capture the factors of fairness, technical competency, and trust actually map on to the expected factors (often called latent factors). If so, then there is evidence that the factors have validity such that they can then be used to test the theoretical model. We calculated Cronbach's alpha for each latent factor; Cronbach's alpha values >0.70 indicate strong reliability as a factor (Tavakol and Dennick 2011). Second, we empirically tested the structural relationships through a structural regression approach (Iacobucci 2009). This approach has several advantages over ordinary regression approaches including the ability to better address measurement error and issues of multicollinearity. The structural analysis evaluates the extent the empirical data from the respondents fit the hypothesized theoretical model that procedural fairness and technical competency affect the levels of trust.

As an additional step, we also examined the model fit for each moderator variable (dichotomized for disagreement vs. agreement with value congruence, disagreement vs. agreement with moral obligation, beliefs about limited vs. expanded government, no vs. some interaction with DNRWD personnel) using multi-group analyses (Kline 2005). Consistent with research practice, for all the SEM analyses, we compared indicators of overall goodness of model fit to what is considered acceptable standards (i.e., $\chi^2/\mathrm{df} < 0.05$, root mean square error of approximation [RMSEA] < 0.08 and RMSEA 90% CI between 0.00 and 0.10 [no upper limit if lower limit includes 0], comparative fit index [CFI] > 0.90; Kline 2005, Zajac et al. 2012).

RESULTS

After adjusting for undelivered surveys, duplicate responses, and respondent opt-outs, the usable response rate was 39.6%

($n = 2{,}703$). A comparison of respondents and non-respondents revealed that respondents were slightly more critical of DNRWD. For example, in response to the question, "I believe that the DNRWD as a whole is effective at managing Michigan's wildlife resources" the mean response from mail-back questionnaire respondents was 3.00 ± 0.99 (SD) compared to 3.39 ± 1.20 for non-respondents who answered phone interview questions ($t_{170} = -4.02$, $P \leq 0.001$). The respondent population reflected the license-holder population well in terms of demographic and geographic composition. Although 91% of respondents were male and the mean age was 54 ± 14.3 years, there was no statistical difference between respondents' and non-respondents' reported gender ($\chi^2_4 = 1.87$, $P = 0.76$). Data for analyses therefore were not weighted to correct for non-response biases.

Descriptive statistics illustrate the properties of our trust scale (Table 1). Based on the initial analysis of the measurement model, we deleted 4 items form the procedural fairness measure that had high cross loadings and 1 item from the technical competency measure and allowed the factors to covary. We re-ran the measurement model and found that the data fit the model well, which indicates the items on the survey captured the 3 factors of fairness, competency, and trust as expected allowing us to then test the structural model. The reliability of the final measurement model for the 3 factors (Cronbach's alpha) were high; 0.82 for fairness, 0.89 for competence, and 0.94 for trust.

In terms of testing of the structural model, the SEM results indicated that the hypothesized model had good fit indices ($\chi^2_{38} = 153$, $P \leq 0.001$; CFI $= 0.99$; RMSEA $= 0.04$), supporting the validity of the tested model. Procedural fairness and technical competence were positively related to trust and confidence. We also found that the coefficient for procedural fairness (standardized path coefficient $= 0.70$, $Z = 20.06$, $P \leq 0.001$) was >4 times greater than that of technical competence (standardized path coefficient $= 0.15$, $Z = 4.79$, $P \leq 0.001$; Fig. 1).

For the moderator analysis, we compared whether the relationship between fairness and trust (or technical competency and trust) was affected by ≥ 1 of the 4 potential moderators of value congruence (agree or disagree), moral obligation to follow rules (agree or disagree), beliefs about limited government (agree or disagree), and whether the respondent had any interaction with DNRWD personnel (yes or no). Examination of the standardized path coefficients indicated the strength of the relationship between fairness and trust was higher (0.89) when respondents agreed (i.e., had values congruent with the DRNRWD) than when respondent values were not congruent (0.51; Table 2). For the other potential moderators, the change in path coefficients were small, showing that the relationships of fairness and trust and technical competency and trust remained much the same regardless of whether individuals agreed or disagreed with the other moderator items. For example, the relationships with trust were not much different regardless of whether a respondent agreed or disagreed whether there was a need for more limited government. Similarly, the relationships to trust were not affected by whether the respondent had direct contact with a wildlife employee.

DISCUSSION

Our findings signify the importance of stakeholder beliefs about the extent to which decisions were procedurally fair and transparent (procedural fairness) in building trust and confidence, especially among stakeholders who perceive they share similar values with the SWA. Procedural fairness, also identified as a component of good governance (Decker et al. 2017), is created when the methods by which SWAs make decisions are easily understood by stakeholders, the processes are considered fair, and stakeholders believe they have a voice

Table 1. Statements used to measure 3 factors (fairness, competency, and trust) in a study on trust in the Michigan Department of Natural Resources' Wildlife Division based on responses (sample $n = 2{,}703$) to a mail-back questionnaire completed by resident licensed hunters ≥ 18 years old, Michigan, USA, 2013. For each factor, we present Cronbach's alpha, which provides a measure of internal consistency of scale reliability. For each question, we present the standardized factor loading, which measures the correlational relationship of each variable to the underlying factor.

Factors and statements	Standardized factor loading	$\bar{x}$[a]	SD
Procedural fairness (Cronbach's $\alpha = 0.82$)			
Listens to the public.	0.73	3.52	0.78
Allows the public to have some influence over the outcomes of decisions that are made.	0.69	2.90	0.78
Communicates information (e.g., news, updates, decisions) to the public in a timely manner.	0.64	3.29	0.78
Is truthful with the public.	0.79	3.21	0.93
Technical competence (Cronbach's $\alpha = 0.89$)			
Is operated by employees who are well-qualified.	0.80	3.41	0.83
Is operated by employees who possess the technical expertise necessary to manage Michigan's wildlife resources.	0.85	3.37	0.82
Is operated by employees who have awareness about the work that needs to be done.	0.87	3.42	0.85
Trust and confidence (Cronbach's $\alpha = 0.94$)			
I am confident that the Wildlife Division will do a good job managing Michigan's wildlife resources.	0.90	3.24	0.92
I expect that Wildlife Division will make the right decisions regarding wildlife management.	0.88	3.28	0.96
I trust Wildlife Division to take responsibility for managing Michigan's wildlife resources.	0.89	3.27	0.94
I trust the Wildlife Division to make decisions about wildlife management on my behalf.	0.85	3.10	0.98

[a] Five-point Likert scale with $1 =$ strongly disagree, $3 =$ neutral, $5 =$ strongly agree.
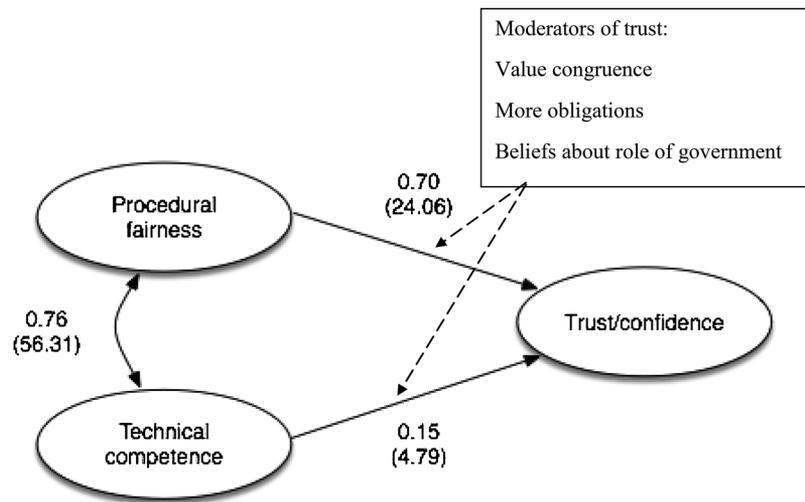
Figure 1. Structural equation model of factors affecting trust or confidence in the Michigan Department of Natural Resources' Wildlife Division, Michigan, USA, 2013. Data are from a mail-back questionnaire (sample $n = 2,703$) of resident licensed Michigan hunters $\geq$18 years old in 2013. Z-statistic in parenthesis.

in the decision process regardless of outcome (Lauber et al. 2012, Schroeder et al. 2017). An important component of agency performance is technical competence in carrying out wildlife management, yet the way decisions are made (Chase et al. 2002) and benevolence toward stakeholders shown by SWA personnel (Rudolph and Riley 2017) appear even more important in building trust between stakeholders and the SWA. Our findings are consistent with studies from other public resource fields that have indicated processes used to reach a decision can be just as important as the outcome itself (Moffat et al. 2015). Investments in personnel trained in stakeholder engagement and attention to transparency of decision processes likely will build trust and compliance with management policies and regulations (Rudolph and Riley 2017). Organizational trust is likely to be eroded when deals are cut by trustees with special interests, decision processes are confusing to the majority of stakeholders (Gregory and McDaniels 2005), stakeholders are not treated fairly or with benevolence (Rudolph and Riley 2014), or trustees and trust managers act in ways that stakeholders believe does not reflect their values (Needham and Vaske 2008).

Although trust takes on myriad forms (Stern and Coleman 2015), our results are largely consistent with findings on trust in organizations from other fields of study that stress importance of decision processes involving stakeholders and

value congruency between organizations and stakeholders (Peters 1996, Needham and Vaske 2008, Pirson and Milholtra 2011, Smith et al. 2013a). Our data are from an important, yet limited, stakeholder group, licensed hunters in Michigan. Our findings may also point to ways trust in SWAs may be gained and strengthened among non-hunters. Non-hunters will need to be able to perceive the SWA as sharing their values while the agency develops ways to include a broad array of stakeholders in conservation (Gregory and McDaniels 2005, Reed 2008, Smith et al. 2013b).

Stakeholder engagement perceived to be procedurally fair requires efforts that go beyond simple participation in decision-making (Lawrence et al. 1997, Lauber et al. 2012). As noted by Lacey et al. (2017:252), "It is one thing to understand a process needs to be fair, but quite another to design and deliver it so that those involved experience it as a fair process." One action to achieve fairness is to provide high-quality contact with stakeholders that is personable through direct, frequent, and timely communication (Chase et al. 2002, Moffat and Zhang 2014). A second action is to create space for consistent and constructive dialogue with stakeholder groups, such as forums, and collect data from stakeholders to focus conversations that are data-driven around their concerns and anxieties (Walsh et al. 2016). A third strategy is early engagement and co-creation of innovative processes to enhance procedural fairness with concerned groups, with managers being open to stakeholder views on new ways of thinking about engagement and collaboration for a more bottom-up approach (Gregory and McDaniels 2005, Lacey et al. 2016). For example, perceptions of fairness in decisions processes about reintro-duction of moose to the Adirondacks of New York, USA greatly influenced stakeholder satisfaction with the reintroduction process and satisfaction with the SWA (Lauber and Knuth 1999). Effectiveness of these strategies could be enhanced if SWA personnel who interact with

Table 2. Factors affecting trust and confidence in a multi-group moderator analyses of questionnaires mailed to resident licensed hunters $\geq$18 years old, Michigan, USA, 2013.

Response to questions on value congruence	Standardized path coefficient	Z	P
Disagree with value congruence			
Procedural fairness	0.51	10.90	<0.001
Technical competence	0.21	4.50	<0.001
Agree with value congruence			
Procedural fairness	0.89	17.30	<0.001
Technical competence	−0.10	−1.56	0.120

stakeholder groups were trained on group facilitation and process consultation skills where individuals learn how to collaboratively diagnose, design, and implement problem-focused interventions (Schein 2010).

In our study, influence of people-related processes on trust and confidence in an SWA exceeded the influence of stakeholder beliefs about the technical competencies displayed by SWA personnel. Competencies of SWA personnel are assumed by stakeholders to already exist at sufficient levels to manage resources (Peters 1996) or are less valued by some stakeholders when compared to the way they are treated by organizations such as an SWA. This finding does not imply competencies are not important. Rather, the traditional competencies emphasized in wildlife certification and education (Van Heezik and Seddon, 2005, Baydack 2017) are not solely sufficient to gaining trust among stakeholders in wildlife management. Neither perceptions of fairness nor technical competencies, however, are influential in themselves when issues are morally charged or contentious (Earle and Siegrist 2008), which is frequently the case in wildlife management. In those cases, value congruency may be the most important factor influencing trust (Manfredo et al. 2017).

Value congruency, the most influential moderator of trust in our study, frequently is reported as a key factor affecting levels of trust between an organization and its stakeholders (Earle 2010). Among stakeholders who do not believe the SWA shares their values, mechanisms to building trust, however, are seldom under direct influence of the agency. Rather, the disparity likely reflects changes in broader social values, beliefs, and attitudes (Manfredo et al. 2017). Nonetheless, our results imply that even when value congruency between stakeholder and the SWA is not perceived by stakeholders to be aligned, procedural fairness still had greater influence on levels of trust than perceptions of technical competency. Context in which trust is measured matters (Pirson and Malhotra 2011). We measured trust in an SWA without a distinct situational context such as wolf (*Canis lupus*) management or wildlife disease management. In such controversial or contested issues, individuals may fail to form beliefs based apparent scientific evidence presented by experts and display a lack of trust in those experts who rely on that scientific evidence for shaping management decisions (Kahan et al. 2011). Individuals in those situations conform more to their beliefs, risk perceptions, and perceptions of government more than to scientific competence (Poortinga and Pidgeon 2003). In less contentious situations, however, such as those in which we measured trust, stakeholder engagement processes appear to be most influential in affecting levels of trust in SWAs.

Although fostering of trust between an SWA and its stakeholders is considered a desirable attribute, increased levels of trust do not necessarily translate into greater levels of stakeholder participation in decisions or involvement in management activities (Smith et al. 2013b). The more trust an individual has in an organization, the less likely they feel a need to question the organization or engage with the organization to get what they want (Hardin 1999, Davenport et al. 2007). Whereas trust may remain a goal of agencies, gaining trust does not necessarily result in less challenging, less expensive stakeholder engagements. Even if high levels of organizational trust exist, there is little evidence that challenges with stakeholder participation would disappear. What may occur is those people who trust the agency do not participate (Smith et al. 2013b), whereas people who distrust the agency continue to engage vigorously to achieve benefits individuals are seeking (Pirson and Malhotra 2011). Progress in a democratic process, however, is by definition nearly always catalyzed by a certain level of distrust in authorities (Warren 1999).

Since the early 1960s, citizens' reported trust in government has declined (Nye et al. 1997, Twenge et al. 2014). Levels of trust in civil servants reported within the United States are moderate when compared with other countries in the developed world (Van Ryzin 2011). We expected to find a distrust in government variables to have greater influence as moderators than we detected. A lack of detected effect may be because most reported trends in distrust of government are focused on federal or Congressional levels (Chanley et al. 2000) rather than specific entities such as an SWA. That we surveyed a specific type of stakeholders, purchasers of hunting licenses who have opportunity to interact with the DNRWD, may have influenced our reported levels of trust in a more positive way than expected. The DNRWD presumably is not an abstraction to most licensed hunters in Michigan. Differences between Michigan and national trends also may be attributed to an over exaggeration of distrust in national surveys because of imprecise measures of trust, imprecise referent of trust (Cook and Gronke 2005), and stakeholder personal experiences with SWA personnel. Trust and confidence in organizations such as an SWA often is correlated with age; the age cohort considered Baby Boomers (born 1946–1964) typically report the lowest levels of trust in government (Twenge et al. 2014). Baby Boomers coincidentally comprise the greatest proportion of licensed hunters in Michigan and elsewhere (Winkler and Warnke 2013).

People develop trust in people, not entities *per se*. Through their actions, personnel who comprise organizations are creators of organizational trust (Pirson and Milhotra 2011). The current organizational structure of an SWA, with politically appointed trustees and professionally trained trust managers likely blurs perception of the roles and actions of trustees and trust managers (Jacobson et al. 2010, Smith 2011). Even with a specialized entity such as SWAs, the scale of bureaucracies within which SWAs are embedded are large or complex. This situation makes it virtually impossible for enough stakeholders to know individuals (e.g., a district biologist, regional supervisor, commissioner) or distinguish the roles of those individuals sufficiently to build interpersonal or affinity trust (Stern and Baird 2015). In these cases, stakeholders likely trust or distrust the structure of the agency process, predictability of performance, and in some cases the behavior of individual SWA personnel (Henry and Dietz 2011). This phenomenon emphasizes the importance of organizational trust.

Engagement skills of all SWA personnel will thus influence the level and quality of stakeholder participation (Chase et al. 2002) consistent with principles of good governance (Decker et al. 2017). Yet, it may be a fool's errand for agencies to strive for full trust and confidence of their stakeholders. Not all interests can be assured of winning given the diversity of stakes involved in wildlife management (Chase et al. 2002, Davenport et al. 2007, Needham and Vaske 2008). In addition, values held by stakeholders will continue to change and influence value congruency between SWAs and those people who they serve (Manfredo et al. 2017). A certain level of distrust of government is inherent and probably healthy to forms of democratic processes in which public wildlife management is rooted.

MANAGEMENT IMPLICATIONS

Behaviors of SWAs and actions of personnel within agencies that create a belief by stakeholders that they are being treated fairly and with benevolence are most likely to build trust between stakeholders and SWAs. Investments in hiring personnel with engagement skills and creating decision processes aimed at effective and inclusive stakeholder engagement can be expected to foster trust and confidence in SWAs regardless of geographical or socio-cultural location. The implications of our findings on trust will become even more important as the number and type of stakeholders in wildlife management increase and diversify in the future.

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