STRATEGIC LEGITIMACY ASSESSMENT: THE CASE OF THE ILLINOIS LIVESTOCK INDUSTRY

BY

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THESIS

Submitted in partial fulfillment of the requirements for the degree of Master of Science in Agricultural and Consumer Economics in the Graduate College of the University of Illinois at Urbana-Champaign, 2008

Urbana, Illinois

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ABSTRACT

This thesis presents a legitimacy assessment method. Three core elements constitute the basis of the method - the stakeholder figure, the legitimacy themes and the legitimacy bases. The analysis combines the deductive and inductive investigative approaches. The context for the legitimacy assessment is the Illinois livestock industry. Results indicate the Illinois livestock industry has severe legitimacy liabilities. Additionally, the industry strategy may be ineffective addressing the legitimacy challenges posed by local communities. A secondary result of the research identifies the role of the legitimacy agent as a central component of the legitimacy state. Recommendations to improve the current legitimacy state of the Illinois livestock industry are provided.
ACKNOWLEDGMENTS

I want to sincerely thank my adviser Professor Peter Goldsmith for the opportunity to advance my studies at the University of Illinois. Thanks for the guidance, encouragement and financial support. I learned a great deal through out the years needed to accomplish the challenging project we fully embraced. Your willingness to take risks and to explore the unknown taught me way beyond the scope of the research.

Thanks to my thesis committee: Professor Randall Westgren, Professor Bryan Endres, and Professor Miguel Gomez. I appreciate very much the comments, feedback, and suggestions for the thesis.

Special thanks also to the truly learning environment propitiated by the faculty, the staff and the fellow students at the Department of Agricultural and Consumer Economics at the University of Illinois. I have at the highest regard my student experience at the Department.

Thank you, Fabiola. Your friendship, love and support were fundamental. Luisa, Mom and Dad, you guys are priceless. Thanks to my friends: for your support and encouragement as I completed my thesis.
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INTRODUCTION

The Illinois livestock industry has steadily declined over the last three decades (Goldsmith and Saripally, 2007; Vansickle, 2007). Either as measured by the change in cash receipts from marketing, by the ranking among other states, or by the number of farms, the long term picture is one of decline (Figure 1). Multiple reasons may explain such a trend: increased competition from other states and countries, increased production costs, lower meat or dairy prices, reduced investment, and local communities’ opposition to livestock expansion.

This opposition has grown in recent years as the average farm size has increased. The increase in the farm size augmented the production of negative externalities, such as odor. At the same time urban-to-rural migration has increased population densities and changed local norms about rural land use. The phenomenon called “NIMBY” or “Not In My Back Yard” captures the modern reality that residents of rural areas often prefer animal...
agriculture production be practiced elsewhere. This local opposition then causes farmers to not invest or expand their operations, or outsiders to move to an area to establish new livestock operations. In the end the industry declines through lack of investment.

The constraint represented by the local community to the development of the Illinois livestock industry can be illustrated in two cases. First, communities are given voice and can constrain the growth of livestock industry through the Livestock Management Facilities Act (LMFA) process. Second, they are also able to affect the siting or expansion of livestock production using the court system, specifically the Circuit Courts of Illinois.

The Livestock Management Facilities Act (LMFA) is the primary statue regulating the construction and expansion of new livestock facilities in Illinois. Part of the application process includes the option for local communities to request a public informational meeting. At the public informational meeting, the Illinois Department of Agriculture (IDOA) takes testimony both from the farmer and the local community regarding compliance to the eight siting criteria (Appendix A). The eight siting criteria summarize the Act’s requirements.

Between 1999 and 2001 twenty-two applications for siting or expansion were submitted to the IDOA that were subject to a public meeting if requested by the local community. Construction took place on ten of the twenty-two applications.
Public hearings were requested or conducted on eleven of the twenty-two facilities by the local community. So there was sufficient concern for the community to mobilize and request a hearing. Construction took place on five of the eleven, while four sitings took place without a hearing. The lack of hearing implies an instance where the community was not concerned enough about the expansion to request a public hearing. There appears to be concern among local communities about the siting or expansion of livestock facilities in their communities to the point that they often request a public hearing.

Local communities can also affect the expansion of the livestock facilities using the court system. For example, the Circuit Court of De Kalb County enjoined the construction and operation of an 8,000-head hog facility proposed by the Burnett Farms in 2003. The project had proceeded completely through the LMFA process, including a public hearing, and was approved for construction. The suit was filed under common law and statutory provisions even though the proposal had been approved by the Illinois Department of Agriculture. This case – Nickels v. Burnett – is the first court application of anticipatory nuisance law to a livestock confinement operation that had not yet been built. There have been four similar suits since in Illinois to enjoin either the operation or construction of a livestock facility approved under the LMFA (Zeman, 2007).

The livestock industry faces real challenges from community stakeholders. These challenges have become so strong as to threaten the future of the industry in Illinois. The legitimacy of the industry and the form of operation appear to be at the heart of
community concerns about the operation of livestock in numerous communities in the state.

This thesis proposes a methodology to assess the legitimacy state of the livestock industry in Illinois. The research focuses on understanding local communities’ reasons to challenge the legitimacy of the livestock facilities. What used to be a taken-for-granted feature of rural life, local communities now question whether animal agriculture production is an appropriate business form or not (Goldsmith and Martin, 2006; Martin, 2004; Wagner and Dempsey, 2003). The livestock industry now faces a similar dilemma to the chemical and utility industries. The final products are in great demand, but the legitimacy of the siting and operation of the production plants are questioned (Martin, 2001; Buescher, 2004; Paterik, 2004; Romero, 2004).

The application of legitimacy concept to the managerial context is recent and has proven to be a prolific and insightful area for investigation. Empirical research finds significant implications of legitimacy on a multitude of organizational dimensions. For example, legitimacy theory has been applied in evaluating the role of the media in legitimizing firms’ initial public offerings (Pollock and Rindova, 2003); the role of legitimate organizational affiliations on the survival rates of hospitals (Ruef and Scott, 1998); and the importance of building internal and external network legitimacy for small and medium sized firms (Human and Provan, 2000).
The empirical literature has generally focused on the link between an organization’s legitimacy and its performance or survivability. In this way the research has been historical, linking cause and effect. While it is clear that legitimacy is critical, left unaddressed is how managers assess and explicitly respond to the ebb and flow of the legitimacy state of their organizations. The purpose of this research is to provide an operational guide to managers as they address, in real time, the interplay between the legitimacy of the organizations and the ever growing complexities of the modern business environment.

This investigation anchors its empirical approach in two main theoretical areas: the theory of legitimacy comprising four different legitimacy bases: pragmatic, regulative, normative, and cognitive legitimacy (Suchman, 1995; Aldrich, 1999; Scott, 2001) and the stakeholder theory (Freeman, 1984). The systematization of the different legitimacy bases provides a powerful tool to expose the nuance of legitimacy for managers, allowing them a more robust analysis and specificity of action. Stakeholder theory provides a concrete reference for analysis regarding the relevant actors interplaying with the firm. Legitimacy is ultimately granted or withheld by the constituencies with whom organizations interact, exchange resources, and ultimately define themselves.

This thesis addresses several issues under the broader objective of assessing the legitimacy state of the livestock industry. First, a method is designed for evaluating the legitimacy of a firm or an industry. Second the research provides clarity to the theoretical taxonomy of legitimacy and the interplay with stakeholders and specific contextual
themes, such as odor. Third the relevant stakeholders are characterized according to their legitimacy profile. Fourth the research identifies the pertinent legitimacy themes facing the livestock industry. Finally recommendations are proposed that will help the industry address the legitimacy challenges.

These objectives are addressed using the extended case method where both deductive and inductive analyses are employed (Burawoy, 1991). The research deductively begins from a theoretical base. Then the empirical results arise through a combination of deductive and inductive analyses. Findings then feed back refining and advancing the theoretical model.

The thesis continues with a literature review focused on legitimacy and stakeholder theories, and empirical methods for legitimacy measurement. The methodological section applies legitimacy theory and practice to the case of the Illinois livestock industry. The final sections contain the results, analysis, and recommendations to managers.
LITERATURE REVIEW

The theory of legitimacy has a long history of scholarship applied in a political context. Only recently though has the legitimacy concept been applied within the context of organizations (Zelditch, 2001). Within this new context, “an organization is said to be legitimate to the extent that its means and ends appear to conform to social norms, values, and expectations” (Ashforth and Gibbs, 1990). Legitimacy “is a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs and definitions” (Suchman, 1995). An organization’s activities, social perceptions of adequateness, and the prevailing norms, combine as the driving forces behind organizational legitimacy (Aldrich and Fiol, 1994; Bansal and Clelland, 2004; Kostova and Zaheer, 1999; Zelditch, 2001; Zimmerman and Zeitz, 2002).

The perceptions held by a society are central to the concept of legitimacy. However, there are different reasons why an organization’s behavior may be perceived as appropriate or adequate. To parsimoniously structure our empirical analysis we focus on the four bases legitimacy may be granted or withheld. (1) An organization’s behavior can be considered as adequate based solely on the self interest of a specific audience, pragmatic legitimacy (Suchman, 1995). (2) It may also be considered adequate based on a wider normative system of values, where a specific action is considered to be the “right thing to do,” normative legitimacy (Scott, 2001; Suchman, 1995). (3) Moreover, the perception of appropriateness with respect to an organization’s form and behavior can be derived from its acceptance “as a taken-for-granted feature of the environment,”
cognitive legitimacy (Aldrich, 1999; Scott, 2001; Suchman, 1995) or, (4) more objectively, can be derived from the organization compliance with current laws and government regulations, regulative legitimacy (Aldrich, 1999; Scott, 2001). These four legitimacy basis have been identified in the fields of strategic management, sociology and new institutional theory, and organizational ecology and evolution.

**Pragmatic Legitimacy**

Pragmatic legitimacy is based on individual interests, resting on the “self-interested calculation of an organization’s most immediate audiences” (Suchman, 1995). Self-interest may be a function of convenience (or lack thereof) or from an economic perspective, of the benefits and costs stakeholders receive with respect to the activities of the organization. In this type of legitimacy, there is a direct relationship between the audience being affected – either positively or negatively – and the legitimacy they confer. The greater are the benefits and the utility provided by an organization to an audience, the higher is the pragmatic legitimacy this audience confers. The utility provided to the consumers by an industry’s final products, the services provided to organizations beneficiaries, the revenues generated to the suppliers, and financial returns to shareholders are all sources of pragmatic legitimacy (Brinkerhoff, 2005). On the other hand, the negative impacts from business externalities imposed by an organization on other stakeholders are sources of pragmatic illegitimacy. For example, a firm’s contamination of a community’s water supply would contribute to the deterioration of a firm’s pragmatic legitimacy towards the local community as there might be consequences
to human health, and would also affect pragmatic legitimacy with investors, as measured by potential increased liabilities (Bansal and Clelland, 2004).

Regulative Legitimacy

Regulative legitimacy has its basis in compliance with the law, regulations, and rules (Scott, 2001). It stems from the generalized perception of an organization complying with the relevant laws and regulations, as well as from the perception of its adherence to relevant standards and norms of professional bodies and credentialing associations (Zimmerman and Zeitz, 2002). Within an industry, a firm perceived to address all the regulations and the requirements pertaining to its operation attains relatively greater regulative legitimacy compared with its peers.

The integration of the law, regulations, and rules, and an industry’s corresponding compliance provide formalized and objective evaluation parameters for regulative legitimacy. Having a more objective or arm’s length metric makes regulative legitimacy distinct when compared to the other three bases of legitimacy. The objective reference point allows an organization to claim legitimacy based on its conformity to current regulation or to demonstrate conformity through media communication and state agency tacit endorsement (Zimmerman and Zeitz, 2002). However, the laws and regulations may not have straightforward prescriptions for conduct even though objective assessment is possible (Suchman and Edelman, 1997). Moreover, the difficulty in monitoring and evaluating organizations’ performance vis-à-vis the law or regulations poses an obstacle for claiming or confirming the achievement of conformity.
In addition to the level of conformity itself, it is also important how an organization behaves with respect to laws and regulations. Regulative legitimacy also “involves a generalized sense that the new venture is operating according to the letter and the spirit of laws and regulations” (Zimmerman and Zeitz, 2002). Important is not being perceived to be reactive and resistant towards prevailing legal or regulatory requirements. In this sense, two firms with similar conformity profiles and different attitudes with respect to regulations may have different levels of regulative legitimacy.

The government and its agencies have a critical role in regulative legitimacy. Government and state agencies, besides setting the laws and the regulations, are also primarily responsible for sanctioning and enforcement. Aldrich and colleagues (Aldrich and Fiol, 1994; Aldrich, 1999; Aldrich and Baker, 2001) stress the role of government approval on industry legitimacy, pointing out the critical importance its approval has on the survival and development of the industry and to the symbolic meaning of this acceptance or official recognition. One reason the government can be so critical is that often significant risks and uncertainties are associated with new products or processes. Government support ensures and signals the security of the new business and helps assuage concerns. Another reason that government approval is critical is that industries are vulnerable to products, services, or operating procedures being ruled illegal. Similarly government sanctions, taxes, regulations, and subsidies can all directly or indirectly affect an industry’s evolution.

1 Aldrich (1999) proposes a two-fold typology: cognitive and sociopolitical legitimacy, the last one being divided into two components: the moral acceptance and the regulative acceptance. The regulative acceptance refers specifically to governmental acceptance and its symbolic effect.
As for the symbolic meaning, governmental approval signals to different stakeholders the recognition of an industry, or its actions, as legitimate. For example, the three-year moratorium on new taxes determined by the Internet Tax Freedom Act, which became law in October 1998, signaled the federal government’s recognition that the development of internet commerce was proper and legitimate (Aldrich and Baker, 2001; Wald, 1998). This ruling then had a tremendous impact on how internet commerce evolved.

Normative Legitimacy

Normative legitimacy has its base in societal norms and values. These norms and values serve as a reference for the perceptions of what is considered appropriate or adequate. Values indicate what is preferred or desirable, and provide a standard against which behaviors can be compared. The norms specify “how things should be done” (Scott, 2001). The closer an organization’s goals and means align with the norms and values of the relevant stakeholders, the higher is the normative legitimacy.

The normative dimension of legitimacy introduces a prescriptive, evaluative and obligatory dimension into social life (Weber, 1968). The shared understandings of what is considered to be right and of what is considered to be wrong create expectations about behavior. This differs from pragmatic legitimacy in which morality does not play a central role in judgments of appropriateness.

Norms and values provide a basis for normative legitimacy and range from those that are more general and applicable to all organizations within the business environment - such
as fair play and fair treatment of employees and customers - to those that are specific to an industry (DiMaggio and Powell, 1983). Specific norms and value expectations may vary from industry to industry.

Professional associations serve as a powerful force within each industry explicitly determining appropriate norms and values specific to an industry (Ruef and Scott, 1998; Scott et al, 2000; Zimmerman and Zeitz, 2002). These professional associations not only establish norms and reflect changes over time, but may also serve as a legitimating body. Organizations that receive positive evaluations from one association are likely to display them publicly. While a negative evaluation not only would reflect an internal loss of normative legitimacy, but when communicated through the media may signal a loss of normative legitimacy to outsiders. For example, the American Medical Association (AMA) and the American Hospital Association (AHA) has long had strong influence in the U.S. healthcare field, establishing tight professional norms that enhance public trust (Ruef and Scott, 1998).

*Cognitive Legitimacy*

Cognitive legitimacy is based on the assumption or belief that one form of organizational behavior may be the single appropriate entity to produce the product or service. Normative legitimacy has a moral frame of reference as the basis for evaluating institutions and organizations. Cognitive legitimacy results from taken-for granted scripts, rules, routines, and classification that are adopted by individuals as they frame or define a situation (DiMaggio and Powell, 1991; Scott, 2001). The concept’s underlying
theory is rooted in cognitive models of psychology in which schemas and scripts lead decision makers to resist new evidence (Abelson, 1976; Cantor and Mischel, 1977). Cognitive legitimacy also has its origins in learning theories that emphasize how individuals organize information with the assistance of social categories (Rosch et al., 1976; Rosch, 1978); and attribution theory, where actors infer motives post hoc from menus of legitimate accounts (Bem, 1970; Kelley, 1971; DiMaggio and Powell, 1991).

The distinctive feature of cognitive legitimacy is its “taken-for-granted” characteristic (Aldrich, 1999; Scott, 2001; Suchman, 1995; Zeitz and Zimmerman, 2002). Even though stakeholders can confer legitimacy by normatively evaluating the organization goal, output or process, they can also take it for granted as a feature of the environment (Jepperson, 1991). Therefore, an organization is legitimate from the cognitive perspective when there is little question in individual’s mind, for example, whether the good is to be produced (e.g., primary education) or how it is to be produced (e.g., public schools). Connoting cognitive legitimacy affirms that the organization’s output and the process adopted in production are the natural way to do it (Hannan and Carroll, 1992). Not only can specific products and processes achieve taken for granted status, but also an organization’s general goals and motivations can achieve similar status. For example, in capitalist economies, profit seeking activities enjoy a general belief of being valid and individuals take it for granted as a common goal within the market place (Delacroix et al., 1989).
**Stakeholder Approach**

Despite the fact that Suchman (1995) emphasizes the perceptions and assumptions with respect to the actions of an entity in defining legitimacy, there is no specification regarding who is the social group holding these perceptions or assumptions and, therefore, conferring or challenging legitimacy. This investigation follows the stakeholder approach in strategic management to anchor the theoretical framework on legitimacy and its different bases. The stakeholder approach is also valuable in making operational the livestock industry legitimacy assessment.

Freeman (1984) formally defines a stakeholder in an organization as “any group or individual who can affect or is affected by the achievement of the organization’s objectives”. Managers, customers, shareholders, government and local communities are all examples of different categories of stakeholder groups (Friedman and Miles, 2006). These key stakeholders groups all have a different and unique relationship to the organization under study, and correspondingly create unique legitimacy perspectives.

The legitimacy assessment of each stakeholder represents either an asset or a constraint to the performance of the firms within an industry (Mitchell et al, 1997). Stakeholders are certainly an asset that ensures the survivability and the future growth of an industry. Stakeholders can pose an immediate and direct threat to a firm’s performance when the industry is de-legitimized. In the case of salient stakeholders that have the ability to interfere with the firms’ performance, the legitimacy challenges posed by these
stakeholders demand immediate attention from the managers operating within the industry.

The local community is a crucial stakeholder in case of the Illinois livestock industry. Local communities are often referred to as secondary stakeholder for not having a formal contractual relation to the firm (Clarkson, 1995). However, when the demands of such stakeholders are not addressed, several costs may incur as a result of legal actions, public relations efforts and unexpected demands requiring managerial responses from the firm (Eesley and Lenox, 2006). In the context of the Illinois livestock industry the importance of the local community is reinforced due to its historically relevant role in rural locations. Additionally, the Livestock Management Facilities Act, the act regulating the expansion and construction of new facilities in Illinois, formally establishes standards of operation and standards for approval that take into account concerns and demands from the local community.

The local community, through the power of the Act, can indirectly impede the siting of a livestock facility by vocalizing strong opposition and providing evidence during the formal public hearing. The local community also can directly stop the siting or expansion of a facility via the court system. These two avenues of access provide local community stakeholders with real power to severely jeopardize the long term growth and development of the livestock industry.


Empirical Literature

The application of legitimacy theory to organizational setting has two characteristics. First, the empirical legitimacy literature supports the importance of legitimacy on organizational performance and survival. Second, the methodological approaches in the empirical studies of legitimacy are not uniform. The empirical works employ different measures for legitimacy and investigate legitimacy at different levels of specificity. Normative legitimacy has been used to assess specific organizational properties or management practices (Ruef and Scott, 1998). In other ones, studies are less specific and provide no formal definition of legitimacy. Arthur (2003) studied the general legitimizing effects on stock share price when a firm offers workplace benefit initiatives.

The empirical literature investigates the importance of legitimacy on different organizational contexts. Ruef and Scott (1998) evaluated the effects of managerial and technical legitimacy in the survivability of hospitals. Hospitals associated with appropriate managerial and technical practices presented higher survivability rates. Cohen and Dean (2005) and Higgins and Gulati (2006) also evaluated the impacts of managerial legitimacy. The legitimacy of top management teams increased the pool of potential investors. The results of both studies indicated that legitimate top management teams had a positive impact on potential investors, as measured in the market of initial public offerings.

The results of applied legitimacy research also support the relevance of legitimate organizational forms and legitimate organizational external links. Human and Provan
(2000) studied the evolution of small-firm multilateral networks. The qualitative study demonstrated the importance of the network as a form of organization. A necessary step for the network’s evolution was the constituents’ recognition of a network as a legitimate form of business organization. The legitimacy of external links may also determine an organization’s success or failure. Baum and Oliver (1991) and Singh et al (1986) studied the impact of legitimate external linkages on the survival rates of child-care organizations in Canada. The findings indicated that legitimate external links, such as linkages to government and to community institutions, significantly reduced organizational death rates.

Bansal and Clelland (2004) evaluated the impact of legitimacy within the context of the natural environment and industrial sectors where pollution was an issue. Investor’s perception of a corporation environmental practices and policies adequateness had a significant positive relation to the corporation’s unsystematic stock market risk.

The measurement of organizational legitimacy employs different procedures and varies with the research context. Legitimacy proxies frequently include print media and organizational external links. Deephouse (1996) measured legitimacy through media articles tenor in the context of commercial banks in the Minneapolis-Saint Paul metropolitan area. The author and an assistant coded relevant articles, letters, editorials, and columns in two major local newspapers. They identified articles publically endorsing or challenging the banks’ legitimacy.
Bansal and Clelland (2004) assessed corporate environmental legitimacy through media accounts in the *Wall Street Journal*. The articles were coded as neutral, negative, or positive when they addressed a firm’s environmental legitimacy. Positive articles indicated corporate environmental legitimacy and negative articles indicated corporate environmental illegitimacy.

The two examples measure legitimacy through newspaper articles, each article indicates the public endorsement of or challenge to legitimacy. The use of media accounts as a proxy for legitimacy generally includes two coders and the calculation of the coders’ agreement rates.

Organizational external linkages are another frequent legitimacy measure besides media accounts. Ruef and Scott (1998) employed the accreditation of hospitals with seven medical associations as indicators of managerial and technical legitimacy. Three medical associations affiliations spoke to the issue of managerial legitimacy, three focused on technical legitimacy, and one addressed both forms of legitimacy. The distinguished nature of the medical associations permitted the separate analysis of managerial and technical legitimacy.

Higgins and Gulati (2006) evaluated the legitimacy of top management teams regarding access to resources, such as social and human capital. The external affiliations of the biotechnology firms’ management team to universities, other biotechnology companies, and pharmaceutical organizations indicated resource legitimacy.
Additional measures of legitimacy include the experience and educational level of individuals, and the existing literature. Cohen and Dean (2005) measured the legitimacy of top management teams through managers’ previous industry experience, age and advanced degrees. Eesley and Lenox (2006) ranked the legitimacy of environmental requests according to previous public opinion studies. More specifically, requests varied from less to more legitimate using the following qualitative scale: (1) global warming, (2) GMOs, (3) habitat destruction, (4) pollution, and (5) recycling.

The empirical literature provides ample evidence of legitimacy’s relevance to organizations and demonstrates the application of different legitimacy measures. But no guidance exists for measuring an industry’s legitimacy state or for evaluating the legitimacy based directly on stakeholders expressed statements. Additionally, the empirical literature has only incorporated the four legitimacy bases into the analysis in a limited way. To date no empirical study has analyzed the dynamics of more than two legitimacy basis within the same context.

Our research address all three shortcomings by; simultaneously employing all four legitimacy bases, outlining an applied methodology for evaluating legitimacy, and directly utilizing the statement of stakeholders about the legitimacy of a firm.
METHODOLOGY

Assessing the legitimacy state of an industry poses significant empirical challenges. The theoretical and empirical lack of systematization about the four legitimacy bases has in the past limited empirical measurement, assessment, and analysis. No research to date has analyzed the four legitimacy bases; pragmatic, regulative, normative, and cognitive, in the same setting. How the four relate to each other or how they rank with respect to the overall legitimacy state of an industry is unknown. Additionally, stakeholder theory has not been formally integrated into the empirical analysis of legitimacy. Finally, applying both the theory corresponding to the legitimacy bases and stakeholders has not been applied to the modern phenomenon of the decline of the Illinois livestock industry.

This paper utilizes an inductive approach (Glaser and Strauss, 1967; Eisenhardt, 1989; Strauss and Corbin, 1998) in part because the theoretical and empirical literatures provide little guidance on how to extract and organize data from text within the constructs of the legitimacy bases. There also is no prior work on how to structure the data into subject themes (in our case related to livestock) on which legitimacy statements were being made. Also there was no previous literature to guide us about the structure of legitimacy in an applied setting, or how one might empirically evaluate that structure. The limited empirical research studies the cause and affect of an industry’s legitimacy state. We sought to delve deeper to the structural elements so that manager might be able to directly respond with action to improve the legitimacy state of a firm or industry. Finally, the power of stakeholders and the legitimacy agent as central to the overall assessment of legitimacy was a result of the inductive approach. Only after completing the initial set of
findings did the shortcomings become evident of a theoretical framework that did not include stakeholder theory.

The work though is far from completely inductive. The research is in line with the methodological propositions of the extended case method (Burawoy, 1991) and the iterative grounded theory (Orton, 1997). The primary goal is not in building new theory but in extending and integrating existing theory (Danneels, 2003). The legitimacy framework and the stakeholders’ concept are drawn from the existing theory and the specifics of the industry and relevant variables related to legitimacy dynamics are investigated inductively. In this process the new concepts and relations understood in the empirical investigation contribute, through a constant back-and-forth interaction among emergent findings and the literature, for a refinement of the existing theoretical body.

**Data Sources**

The Livestock Management Facility Act (LMFA) in Illinois provides a unique opportunity for the study of the State’s livestock industry’s legitimacy. The Act, which was adopted in 1996 and amended in 1998 and 1999, is a result of demands both from the livestock industry and from the local community, taking into account the “right of livestock farmers to earn a living”, as well as the citizens and neighbors’ rights to a “safe, clean environment” (IDOA, 2007). The Act primarily focuses on setting standards for the operation and the siting of livestock facilities, with requirements being more or less stringent depending on the size of the proposed facility.
The requirements of the Act are summarized in eight criteria (see Appendix A). The criteria vary in specificity, addressing the management of the facility’s waste, the natural environment and resources, and the implications of the facility on local traffic, odor generation and community development. There are specified setbacks from an occupied residence and populated areas, specified distances from floodplains, aquifer and karst areas, specific standards for lagoon design, certification requirements for the livestock manager and the need for a waste management plan. The eight criteria are central to the siting process of a new livestock facility, as compliance with each of one of the criteria is the basis for the Illinois Department of Agriculture (IDOA) to grant or deny authorization of an application to build a new livestock facility.

Relevant to the subject of this research is the Act’s requirement that the local community have the right to a formal public informational meeting in the county where the siting is to occur (Section 12 of the LMFA). More specifically, if the proposed facility will house 1,000 or more animal units or use an earthen lagoon then the county board may call for a public hearing, which is administered for all counties by the Illinois Department of Agriculture (IDOA). The public informational meeting is a unique opportunity for the local community to have a voice and to provide input to the IDOA, through considerations in favor or against the proposed facility. It is also an opportunity for the farmer to introduce himself or herself to the community and to explain the nature of the project being proposed and how it is going to affect the area.
The public hearing process utilizes a set of IDOA resource people and follows a set meeting design, which is composed by the six ordered sections: (1) the hearing officer’s opening statement; (2) the IDOA representative’s statement; (3) the firm’s statement; (4) a questioning section, where the public can address questions to the IDOA and to the firm representatives; (5) the testimonial section, where the public can state their comments and opinions regarding the proposed facility; (6) and a brief closure section. Following the IDOA statement, the firm statement and each testimonial, the public has a chance to direct questions to each of these parts. All statements made during the hearing are captured by a government appointed stenographer, compiled into official hearing transcripts, and made available to the public through the Freedom of Information Act.

The first public meeting took place in 1999 and until 2005 twenty-two hearings were held at the request of a local county board. Each hearing lasted on average three hours and involved; five classes of stakeholders (farmer, farmer’s consultant, government, outsiders, and local community), 20\(^2\) different farmers, and 15 different counties. Three transcripts of the informational public meeting were chosen randomly for our analysis. The question and testimonial sections constitute, on average, the majority of the transcripts. They are the lengthiest in terms of total lines (78%) and in the number of people speaking (86%, Table 1). The three meetings involved 87 different speakers, some of whom spoke at more than one section throughout a particular hearing. There were 7242 lines of text in the three hearings.

\(^2\) Two farmers submitted two different applications involving the same facility.
### TABLE 1
Public Informational Meeting - Distribution of Sections and People for Three Randomly Selected Hearings

<table>
<thead>
<tr>
<th>Hearing Officer</th>
<th>IDOA</th>
<th>Firm</th>
<th>Questions</th>
<th>Testimonial</th>
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<td>47%</td>
<td>5%</td>
</tr>
</tbody>
</table>

**Building the Database**

The analysis of the transcripts occurred in two phases. The first phase consisted of building a data set in four steps that involved identification of relevant text units, assignation of legitimacy bases, and open coding of the text units for determination of legitimacy themes (Figure 2). The second phase consisted of the analysis of the constructed dataset by identifying and quantifying frequencies, patterns and relationships from the text units and conducting analysis with the results with the purpose of assessing the legitimacy state of the livestock industry.

**Step 1: Unitizing the transcripts and coding for legitimacy bases.** The first step to structure the database was to define a unit of analysis. Statements were selected in the transcripts because they addressed the firm or industry, or some element therein, as legitimate or illegitimate. Specifically, following Suchman (1995), and to be as focused and structured in our analysis as possible, we identified only statements that fitted as an answer to either one of the two following questions: “why is this proposal/firm/industry appropriate?” or “why is this proposal/firm/industry inappropriate?” With the use of these two questions we defined the unit of analysis, referred to as a *text unit*, which can...
correspond to a phrase, a sentence or multiple sentences (e.g. Burnett and Badzinski, 2000; Butterfield, Trevino and Ball, 1996). The two questions were applied to all transcripts sections and, if the statement addressed why the proposal/firm/industry is (in) appropriate, the statement was then selected as a text unit.

Two coders worked independently to identify the text units within the transcripts. As the text units were identified, the coders also assigned to each unit one of the four legitimacy bases (pragmatic, regulative, normative or cognitive) used by the individual in assessing legitimacy. Each text unit was associated to just one legitimacy basis. After having the text units identified and coded, the information was entered into the database. For each quote and the associated legitimacy basis, ten variables were also entered for each data point:

1. a numerical identification unique to each text unit;
2. the name of the farm that was the subject of the public informational meeting;
3. the individual stating the text unit;
4. the stakeholder group of the individual;
5. the public informational section;
6. the line number of the text unit;
7. the number of lines of the text unit;
8. the coder who selected the unit;
9. the statement orientation as in favor or against the proposed operation;
10. which of the eight LMFA siting criteria the statement referred.
FIGURE 2
Building the Database

Initial data
Uncoded transcripts
3 farms - 87 people - 341 pages – 7242 lines

Step 1
• Identification of text units and coding for legitimacy basis
• Two coders working independently
• Enter coding results into database
891 text units - 1936 lines
text unit agreement rate = 40%
legitimacy basis coder agreement = 59%

Step 2
• Two coders working together
• Focus on text units just one coder selected
• Decision on keeping the text unit and on its legitimacy basis
738 text units – 1644 lines

Step 3
• Two coders working together
• Focus on text units both coders selected but coded different legitimacy basis
• Decision on legitimacy basis
738 text units – 1644 lines

Step 4
• Open coding
• Delete extra text units with different quotes but same coding
77 people – 589 text units – 1336 lines
Simultaneously identifying the text units and coding for the legitimacy basis generated three types of raw data: those where both coders agreed on the text unit and on the legitimacy basis; entries where the same text unit was identified but coded differently with respect to the legitimacy basis (duplicates entries); and text units identified by just one coder (coder 1 or coder 2). At step one there was agreement on the text unit and on the legitimacy basis for 199 (22%) of the units, which corresponded to 515 text lines (Table 2). The number of text units identified only by coder 1 corresponded to 264 (30%) units and 498 text lines. The number of text units identified only by coder 2 corresponded to 287 (32%) units, summing 586 text lines. The number of text units that both coders identified but assigned different legitimacy bases corresponded to 141 (16%) text units and 337 text lines. Because the text units identified by both coders but assigned different legitimacy bases corresponded to one entry for coder 1 and one entry for coder 2, these units were named duplicates. The total number of unique text units in the three transcripts identified in step 1 was of 891 units, which corresponded to 1936 text lines. The total number of entries in the three transcripts corresponded to 1032 units and corresponded to 2273 text lines, the difference being the number of duplicate entries and the corresponding number of text lines. The number of text units for each firm proposal is presented in Appendix C.

The agreement rate between the two coders was calculated both for unitizing the transcripts into text units as on the coding for the four legitimacy bases (Table 3). The agreement rate for the text units (t.u.% ) measures how many of the total units identified in the transcripts by both coders were the same. The intercoder reliability rate for the
legitimacy bases coding \((l.b.\%)\) (Miles and Huberman, 1994) measures the level of coding agreement on the legitimacy bases and was measured only over the text units both coders identified in common at first. The average text units’ agreement rate was 40% and the average legitimacy type agreement rate was 59%. The intercoder reliability rates between the two coders increased with each transcript. The transcripts were analyzed sequentially, with Farm A first and Farm C last. Learning occurred over time changing and improving the coding heuristics as the coders worked through the four step process. The agreement rate formulas are explained in appendix B.

### TABLE 2
Number of Text Units and Sum of Lines of Each Step

<table>
<thead>
<tr>
<th>Step</th>
<th>Both units</th>
<th>Coder 1 units</th>
<th>Coder 2 units</th>
<th>Duplicates total units</th>
<th>Total entries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>199 (22%)</td>
<td>264 (30%)</td>
<td>287 (32%)</td>
<td>141 (16%)</td>
<td>891 (100%)</td>
</tr>
<tr>
<td></td>
<td>515</td>
<td>498</td>
<td>586</td>
<td>337</td>
<td>1936</td>
</tr>
<tr>
<td>Step 2</td>
<td>597</td>
<td>141</td>
<td>738</td>
<td>879</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1307</td>
<td>337</td>
<td>1644</td>
<td>1981</td>
<td></td>
</tr>
<tr>
<td>Step 3</td>
<td>738</td>
<td></td>
<td>738</td>
<td>738</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1644</td>
<td></td>
<td>1644</td>
<td>1644</td>
<td></td>
</tr>
<tr>
<td>Step 4</td>
<td>589</td>
<td></td>
<td>589</td>
<td>589</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1336</td>
<td></td>
<td>1336</td>
<td>1336</td>
<td></td>
</tr>
</tbody>
</table>

n = 589

### TABLE 3
Text Units and Legitimacy Basis Intercoder Agreement Rates

<table>
<thead>
<tr>
<th>Firm</th>
<th>l.u. %</th>
<th>l.b. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>38%</td>
<td>56%</td>
</tr>
<tr>
<td>B</td>
<td>39%</td>
<td>59%</td>
</tr>
<tr>
<td>C</td>
<td>43%</td>
<td>63%</td>
</tr>
</tbody>
</table>
Step 2: Reconciling text units just one coder identified. Coders then worked together to reconcile all text units identified only by coder 1 or by coder 2. Each text unit was: a) evaluated as to whether it in fact was a statement about the appropriateness of the firm, and b) evaluated as to whether the legitimacy basis was correctly assessed. At this second step 153 (17%) of the text units were deleted because they were not in fact statements of appropriateness. The dataset at the end of this stage had 798 text units corresponding to 1644 text lines.

Step 3: Reconciling the legitimacy basis code on the duplicates. There were 141 text units (16%) where the coders agreed on the relevancy of the text unit, but disagreed as to the legitimacy basis. Coders debated the underlying rationale for the alternative legitimacy specifications, and then came to agreement as to the best designation. The total number of text units at the end of this step remained 798 units, but the number of entries was reduced by 141 units.

Step 4: Open coding. In addition to assigning for each text unit the legitimacy basis, building the database also involved identifying inductively relevant variables to the dynamics of granting or denying legitimacy. Following Strauss and Corbin (1998) each quote was open coded as for why, how, what, who makes the proposal/firm/industry to be perceived as appropriate or not. Differently from the previous step of working with the four legitimacy bases, this step had no previous structure, initial concepts being noted for each quote and latter on common concepts being grouped into higher order categories. One coder worked at this step.
The first key activity identified and structured the issues and subjects on which individuals challenged or supported the legitimacy of the industry as legitimacy themes. These themes correspond to what Ruef and Scott’s (1998) legitimacy form and Human and Provan’s (2000) legitimacy dimensions. Our legitimacy theme structure originally contained three different levels of nested themes, but as the coding and aggregation process evolved just two levels of aggregation became sufficient.

For example, when a local community individual stated “this does affect me, and the value of my home will go down” the first order entry was “reduced home value”, the second order was “property value” and the third order entry was “economics.” Using the first order created essentially one theme for each text unit, thus was cumbersome and not very helpful. The final aggregation in this example grouped all concerns about property values under one heading, whether they concerned housing, land, building impacts.

The two other variables identified at that time were the legitimacy agent and contextual trigger. Legitimacy agent is discussed in detail in a specific subsection further in the paper. The trigger variable, identifying the motivation for the legitimacy theme questioned, was only present in part of the text units and was not incorporated into the analysis.

The process of associating variables to the text units, partially deductively, as in the case of the legitimacy basis or of the LMFA criterion, and partially inductively, as in the case of the legitimacy theme, resulted in a dataset where the variables explained a legitimacy
statement and the quotes from the individuals speaking at the meetings became an illustration of such statement. As the interest was in unique statements pronounced by each individual, the last stage of step four consisted of deleting the entries that, for one individual, had the same coding with respect to the legitimacy basis, the statement orientation (in favor or against), the LMFA criteria, and the legitimacy theme.

The final database contained 589 units corresponding to 1336 text lines. In relation to the full transcripts, 18% of the 7242 text lines corresponded to unique text units stated by an individual. Though most people who spoke during the three public informational meetings made legitimacy statements at some point, most of what they said was ancillary to the legitimacy issue. 77 of the 87 people present at the meetings made legitimacy related comments; making the transcripts a rich dataset for the study of industrial legitimacy.

All text units were stated in the third, fourth, or fifth section of the hearing: firm’s section (19%), the question section (45%), or at the testimonial section (36%) (Table 4). The first two sections correspond to the hearing officer and the IDOA representative explaining, respectively, the mechanics of the hearing and providing an overview of the LMFA. The last section of the hearing process involves a brief closing formality, thanking the participants and explaining the next steps in the LMFA process.
### TABLE 4
Distribution of Lines, Text Units and People by Transcript Section

<table>
<thead>
<tr>
<th>Hearing</th>
<th>Officer</th>
<th>IDOA</th>
<th>Firm</th>
<th>Questions</th>
<th>Testimonial</th>
<th>Closing</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>lines</td>
<td>0</td>
<td>0</td>
<td>271</td>
<td>559</td>
<td>506</td>
<td>0</td>
<td>1336</td>
</tr>
<tr>
<td>lines %</td>
<td>0%</td>
<td>0%</td>
<td>20%</td>
<td>42%</td>
<td>38%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>text units</td>
<td>0</td>
<td>0</td>
<td>114</td>
<td>264</td>
<td>211</td>
<td>0</td>
<td>589</td>
</tr>
<tr>
<td>text units %</td>
<td>0%</td>
<td>0%</td>
<td>19%</td>
<td>45%</td>
<td>36%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>people</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>49</td>
<td>45</td>
<td>0</td>
<td>77</td>
</tr>
<tr>
<td>people %</td>
<td>0%</td>
<td>0%</td>
<td>6%</td>
<td>49%</td>
<td>45%</td>
<td>0%</td>
<td></td>
</tr>
</tbody>
</table>

n = 589

**Data Analysis**

The analysis of the database consisted of three sequential phases: a descriptive stage, an analytical stage, and a strategy analysis stage (Figure 3). The descriptive and the analytical stages were inductively developed, while the strategy analysis stage compared the legitimacy profiles of two relevant stakeholders, namely the local community and the firms’ consultants. The descriptive stage is presented in the results section (local community and consultants subsections) and the analysis and strategic analysis stages are presented in the analysis section (local community, consultants, local community and legitimacy state, and consultants and legitimacy strategy subsections).

Three core elements are present in each stage of the data analysis: the stakeholder figure, the legitimacy themes and the legitimacy bases. The three elements together constitute
FIGURE 3
Strategic Legitimacy Assessment Method: The Case of the Illinois Livestock Industry

DESCRIPTIVE STAGE
STAKEHOLDERS
• Local Community
• Consultants
• Farmer
• Government
• Outsiders

LEGITIMACY THEMES
• Health
• Odor
• Economics
• Regulatory Adequacy
• Technology
• Community
• Location
• Information
• Environment
• Management
• Recreation
• Regulation Compliance

LEGITIMACY BASES
• Pragmatic
• Regulative
• Normative
• Cognitive

ANALYTICAL STAGE
LEGITIMACY THEMES (AXIAL CODING)
Axial coding second order legitimacy themes within each legitimacy basis
Examples:
• Regulation enforcement
• Information accuracy

STRATEGY ANALYSIS STAGE
Inductive analysis of legitimacy bases, legitimacy themes, and association patterns between legitimacy bases and legitimacy themes
Comparison of stakeholders legitimacy profiles and evaluation of the effectiveness of legitimacy assets with respect to legitimacy liabilities
the basis of the legitimacy assessment method presented. The stakeholder figure segregates the complex social environment of the firm into identifiable actors and social groups. The legitimacy themes are the issues and subjects over which there is a dispute among the stakeholders. The legitimacy bases constitute the cognitive framework individuals use in assessing the appropriateness, the adequateness, and the legitimacy of an industry. The three elements together bring to light the intricate dynamics of industrial legitimacy, revealing what are the liabilities or assets on an industry and how specific stakeholders assess the liabilities and assets in granting or withholding legitimacy. A practical application is that these three elements also provide a tractable methodology for managers to assess and analyze the legitimacy of their firm (industry).

Using the stakeholder approach imparts a strategic aspect to the legitimacy assessment method. Among the stakeholders within an industry (managers, customers, shareholders, government, local communities, for example), the focus of the present method is on the specific stakeholders that impose risks and constraints on the industry performance. Addressing the hypothetical breaching of the firm’s legitimacy threshold has been suggested as being of strategic importance to managers (Zimmerman and Zeitz, 2002). Managers would be challenged by the lack of specificity though of determining when a breach has occurred and the cause of the breach. Focusing on stakeholders helps solve that problem and makes legitimacy more relevant to the strategy setting and implementation process. The stakeholder method is grounded in actual people, organizations, or institutions affecting the legitimacy state rather than establishing ideal levels of legitimacy and evaluating the firm/industry’s position vis-à-vis a hypothetical
state. As stakeholders challenge the industry legitimacy or, as managers identify stakeholders and react to those that could potentially diminish legitimacy.

The descriptive stage consists of: 1) selecting one stakeholder at a time; 2) listing the frequencies of the legitimacy themes; then 3) within each theme, the frequency of the legitimacy bases, 4) axial coding (see Strauss and Corbin, 1998) the legitimacy theme as to its properties and characteristics within the identified legitimacy bases.

In practical terms, in the context of the Illinois livestock case, that meant inductively coding the legitimacy themes within each legitimacy basis. For example, regulatory adequacy was the fourth most frequent legitimacy theme. It was challenged predominantly on a normative basis. The axial coding process identified that when the local community challenged regulatory adequacy on a normative basis, the statements were either challenging the comprehensiveness or the enforcement of the statute.

A map of the subjects being challenged or supported, and on what bases, are revealed by analyzing one stakeholder class and the legitimacy themes and legitimacy bases they express. Within the Illinois livestock context, for example, 21 legitimacy themes were identified for the local community. Most of the relevant text units (90%) involved only 11 legitimacy themes. The results and analysis will focus on these 11 main themes. That meant, in the case of the local community, a reduction of 321 text units to 290 text units (10% reduction). And for another stakeholder, the firm consultants, that meant a reduction of 183 text units to 155 text units (15% reduction).
The analytical stage was markedly inductive. After having the legitimacy themes and the legitimacy bases outlined by each stakeholder in the descriptive stage, the analytical process consisted of exploring what the legitimacy bases per se and what the legitimacy themes per se revealed about the legitimacy dynamics of the livestock industry. The analysis also included exploring the relation among the legitimacy themes and the legitimacy bases within each stakeholder. The frequencies of each legitimacy theme or legitimacy basis were used as an indication of significance in representing the legitimacy profiles of each stakeholder. In the case of the local community stakeholder, the patterns of association between the legitimacy bases and the legitimacy themes revealed two different groups of legitimacy themes, each one characterized by a strong presence of the pragmatic legitimacy in one case and normative legitimacy in the other group. In the case of the consultants stakeholder, such pattern was not identifiable, but the analysis of the legitimacy themes exclusively revealed the importance placed by the consultants on the technical and managerial operation of the facility in order to support the proposed firm legitimacy.

The strategy analysis stage is the last phase of the legitimacy assessment method. The strategy analysis stage consists of comparing and evaluating the developed profiles of stakeholders supporting and challenging the firm or the industry’s legitimacy. This stage very specifically outlines for stakeholders the effectiveness of their themes and legitimacy in advocating their interests. So for managers, this stage provides an assessment of the effectiveness of their approach attenuating the legitimacy challenges.
stated by stakeholders opposing the firm. The comparison and evaluation of the effectiveness of the legitimacy discourse provides a reference for managers to address pertinent legitimacy liabilities associated with firm practices.
RESULTS

Stakeholders

Five distinct stakeholders participated in the public informational meetings: the farmer, the farmer’s consultant, the government, outsiders with no direct connection to the community or site, and the local community. The farm consultants are the engineers contracted by the farmer to design and conduct the building of the facility and to aid in the siting process. The hearing officer and the Chief of the Bureau of Environmental Programs represent the Illinois Department of Agriculture and conduct the hearing as prescribed in the LMFA. Outsiders are individuals who do not reside or are not related to the town but have a direct interest in the siting of a new CAFO. They may be farmers from another region or state, environmentalists, social activists, or third part technical specialists. The local community stakeholders reside locally and may be directly or indirectly impacted by the siting of the facility.

The siting process of a new livestock facility and the public informational meeting has a strong local component. Local community members correspond to 63 out of the 77 individuals speaking in the meetings and account for 60% of the text units addressing the legitimacy of the proposed facility. The remaining includes the farmers, the farmers’ consultants, an outside expert (1%), and the government (Table 5).

The high percentage of local community participation reflects the controversy surrounding CAFOs and the usefulness of the hearing process to assess community standards. The negative externalities associated with CAFO facilities provide a strong
incentive for community participation in the process (Martin, 2004; Wagner and Dempsey, 2003). The current regulation also reinforces the local aspect of the whole process. The LMFA requires that a public notice of the farmer’s notice of intent to construct a livestock facility must be published in a newspaper of general circulation within the county in which the facility is to be located. An informational meeting can be petitioned, through the county board, by 75 or more registered voters residing in the county.

The local community (60%) and the farm consultants (31%) are the two most active stakeholders, accounting for 91% of the total legitimacy text units. Out of the five stakeholder’s groups attending the meetings, Despite the lower number of individuals as farm consultants, these have a significant participation due to their central role in: first, describing the facility proposal and how the facility meets the eight siting criteria; and second, in answering questions from the public meeting attendants. The consultants contribute much more significantly than farmers, as measured by text units. The farmers limited themselves to briefly introducing themselves and to occasionally assist the consultants in answering the questions directed by the audience, their statements corresponding to 29 text units or 5% of the total text units.

| TABLE 5 |
| Text Units and Individuals Frequencies and Numbers by Stakeholders’ Groups |
| favorable | opposed |
| farmer | consultants | government | outsiders | local community | local community |
| text units | 29 | 183 | 17 | 8 | 31 | 321 |
| percent | 5% | 31% | 3% | 1% | 5% | 55% |
| individuals | 2 | 6 | 5 | 1 | 9 | 54 |
| percent | 3% | 8% | 6% | 1% | 12% | 70% |

n = 589

The local community (60%) and the farm consultants (31%) are the two most active stakeholders, accounting for 91% of the total legitimacy text units. Out of the five stakeholder’s groups attending the meetings, Despite the lower number of individuals as farm consultants, these have a significant participation due to their central role in: first, describing the facility proposal and how the facility meets the eight siting criteria; and second, in answering questions from the public meeting attendants. The consultants contribute much more significantly than farmers, as measured by text units. The farmers limited themselves to briefly introducing themselves and to occasionally assist the consultants in answering the questions directed by the audience, their statements corresponding to 29 text units or 5% of the total text units.
The individuals attending the meetings are predominantly opposed (70%) to the proposed facility, challenging the legitimacy of the proposed operation on several bases and account for 54% of the total text units of the meetings. Additionally, if considering only outsiders and the local community - the stakeholders that are attending the meetings either to question or to testify - their opposition stands out even more sharply: 321 out of 360 (89%) text units address why the proposed operation is illegitimate. With respect to the stakeholders in opposition, the local community is the only stakeholder in the public meetings with individuals standing against the proposed facility.

Stakeholder support for the facility is much more limited. Farmer consultants are the most active stakeholders describing the proposed facility as legitimate with 31% of all text units. Farmers provide 5%, local community 5%, government 3%, and outside experts 1%.

Government statements support the legitimacy of the proposal occurred when the appropriateness of the regulation was stressed. Their role Even though the government is assumed to have a neutral role, either as represented by the hearing officer mediating the meeting or as represented by the IDOA Chief of the Bureau of Environmental Programs explaining the regulation provisions,. However, this was not the tone of their interventions. The comparison of text unit number of lines to the total number of lines by the government indicates that clarification, mediation and facilitating communication was the predominant aspect of the government role. The outsiders stakeholder was
represented by only one individual, whom statements supported the appropriateness of the proposed facility.

From this point on the legitimacy assessment focuses solely on the local community in opposition and on the farmer consultants text units because they provide most of the relevant text units. The local community in opposition will be referred to as local community only and the farmer consultants will be referred to as consultants. These two stakeholders are the most important in the analysis of the legitimacy of the Illinois livestock industry. The local community legitimacy challenges represent a concrete threat to the development and growth of the industry. The consultants legitimating efforts indicate the farmers’ strategies to address the legitimacy challenges faced by the livestock industry. Additionally, from a practical standpoint, the local community and the consultants are the stakeholders best represented in the public informational meetings.

Local Community

The local community challenges the legitimacy of the new facility over twenty-one different legitimacy themes. The twenty-one legitimacy themes (Table 6) are expressed through the 321 text units expressed by the local community stakeholder. The themes though are not uniformly distributed. For example, health and odor are the two most frequent legitimacy forms, with 52 and 40 text units each. As for the lowest frequencies, traffic and regulation compliance each are mentioned only once. Eleven themes represent 90% of the local community’s text units. The analysis is conducted on these eleven and the ten minor themes are dropped in an effort to shorten the analysis.
The top legitimacy theme mentioned by the local community was health (52 text units), with legitimacy being challenged on a pragmatic, normative and cognitive basis, and pragmatic being the predominant legitimacy basis, occurring on 36 (69%) of the health 52 text units (Table 7). Regulative legitimacy was rarely employed by community stakeholders, and was not raised in the case of health concerns. This contrasts directly with the consultant stakeholders who primarily employ regulative legitimacy, and this will be discussed in more detail below.

The specific health issue generating the pragmatic legitimacy challenge by the local community can be grouped into three categories: air pollution related, water pollution...
related, and a non-specified category. With respect to air pollution the health concerns relate to breathing problems, like asthma, for example. With respect to water pollution the health concerns are related to waterborne illnesses related to wells or aquifer contamination. The general category refers to statements in which the speaker expresses his opposition to the facility due to negative health impacts but does not specify what this health impact would be. An example of a pragmatic legitimacy challenge focused on health was (also see Table 8):

“By over-populating Clay County with swine facilities in poor location choices, we will see an increase in serious health problems” (person C50)

| Local Community Legitimacy Themes Distribution of Legitimacy Bases |
|-----------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Legitimacy Theme | Count | Pragmatic | Regulative | Normative | Cognitive |
| 1 health | 52 | 36 (69%) | - | 8 (15%) | 8 (15%) |
| 2 odor | 40 | 30 (75%) | - | 1 (3%) | 9 (23%) |
| 3 economics | 33 | 30 (91%) | 0 (0%) | 3 (9%) | 0 (0%) |
| 4 regulatory adequacy | 30 | - | - | 29 (97%) | 1 (3%) |
| 5 technology | 26 | 4 (15%) | - | 11 (42%) | 11 (42%) |
| 6 community | 25 | 10 (40%) | - | 15 (60%) | - |
| 7 information | 23 | 2 (9%) | 3 (13%) | 18 (78%) | - |
| 8 location | 23 | 14 (61%) | 2 (9%) | 3 (13%) | 4 (17%) |
| 9 environment | 14 | - | - | 13 (93%) | 1 (7%) |
| 10 management | 12 | 2 (17%) | - | 8 (67%) | 2 (17%) |
| 11 recreation | 12 | 11 (92%) | 1 (8%) | - | - |

n = 290

Normative and cognitive legitimacy statements related to questions of health were less frequent, totaling 8 text units (15%) for each legitimacy basis. The statements addressed the same health issues (air related, water related, general) mentioned by the constituents addressing pragmatic legitimacy. The normative and cognitive legitimacy statements are

3 Letter C corresponds to the Transcript of Public Informational Meeting of Farm C, and number 50 correspond to individual order of appearance.
less specific and focus on the health impacts over all surrounding residents. For example, the normative legitimacy statements about the adverse health impacts of CAFOs emphasize the wrongness of a business operation imposing health risks to a community. The cognitive legitimacy statements take for granted the existence of harmful health impacts derived from the facility operation.

### TABLE 8

<table>
<thead>
<tr>
<th>Legitimacy Theme</th>
<th>Legitimacy Basis</th>
<th>Illustrative Quote</th>
</tr>
</thead>
<tbody>
<tr>
<td>health</td>
<td>pragmatic</td>
<td>“By over-populating Clay County with swine facilities in poor location choices, we will see an increase in serious health problems” (C50)</td>
</tr>
<tr>
<td>odor</td>
<td>cognitive</td>
<td>“They [the owners] do it the very best they can. I appreciate that, but it does stink” (C19)</td>
</tr>
<tr>
<td>economics</td>
<td>pragmatic</td>
<td>“If this facility is built, our property will depreciate considerably in value” (C38)</td>
</tr>
<tr>
<td>regulatory adequacy</td>
<td>normative</td>
<td>“You guys need to change your standards” (B6)</td>
</tr>
<tr>
<td>technology</td>
<td>normative</td>
<td>“Highly erodible ground, to my knowledge, has to be no-tilled. This is a tillage practice that will be incorporating this manure” (A6a)</td>
</tr>
<tr>
<td>community</td>
<td>normative</td>
<td>“My question is why would anyone want to take away the gift of clean air and water from friends and neighbors to benefit just one family's posterity?” (C49)</td>
</tr>
<tr>
<td>information</td>
<td>normative</td>
<td>“You haven't notified the public where these acres [for animal waste] are. After all, the people here all live in the area” (A6b)</td>
</tr>
<tr>
<td>location</td>
<td>pragmatic</td>
<td>“One of the biggest concerns for the community here is our school and the distance it is from the facility” (C4)</td>
</tr>
<tr>
<td>environment</td>
<td>normative</td>
<td>“You're going to have these antibiotics flowing with this water… The wild animals will be drinking them” (C5)</td>
</tr>
<tr>
<td>management</td>
<td>normative</td>
<td>“There's no requirement. You can just pollute the hell out of the air and nobody cares” (C20)</td>
</tr>
<tr>
<td>recreation</td>
<td>pragmatic</td>
<td>“We will not be sitting out fishing. We won't be -- there's a lot of things we will not be able to do” (C7)</td>
</tr>
</tbody>
</table>

Odor is the second most frequent legitimacy theme mentioned (40 text units) by the community opposing the facility, with pragmatic and cognitive legitimacy being questioned on 75% and 23% of the total text units, respectively, and accounting for the majority of the text units. The strong emphasis on pragmatic legitimacy is expressed either in statements addressing only odor per se, in statements concerned about the

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burden odor imposes on the community and their residents as a whole, or in statements mentioning more specific limitations imposed by odor, such as the need to keep windows closed, for example. With respect to the text units expressing a weak cognitive legitimacy of the livestock operation, these are very direct and evidence the taken for granted understanding that the facility presence will imply the generation of odor affecting the community. Exemplifying a testimonial challenging the facility on cognitive legitimacy:

“They [the owners] do it the very best they can. I appreciate that, but it does stink” (person C19)

The third more frequent legitimacy theme occurring within the local community is economics, where speakers strongly emphasize pragmatic illegitimacy, which accounts for 30 of the total 33 text units (91%). The major theme generating protests was the possibility of real estate devaluation, stated in half of the text units addressing pragmatic legitimacy. In asserting the potential real estate devaluation, statements ranged from moderate concerns to more robust beliefs that property price would go down. As put by one testimonial:

“If this facility is built, our property will depreciate considerably in value” (person C38)

The other half of the statements under the economics category challenging pragmatic legitimacy are diverse. They address a variety of themes, such as the economic future of the community, the remuneration and quantity of jobs offered, and the cost to maintain the county’s roads due to the increased truck traffic.
Regulatory adequacy is the fourth most frequent legitimacy theme present in the local community statements, expressed in 30 text units. Speakers use a normative basis to make that evaluation. Within the dataset 29 text units or 97% of the text units challenge the normative legitimacy of the existing regulations. The statements fall into two distinct groups, one addressing the enforcement (38%) and the other addressing the comprehensiveness (62%) of livestock industry regulations. The axial coding process revealed how statements on the enforcement of the regulations were quite uniform, focusing on inspection, monitoring and enforcement in general. Statements about the comprehensiveness of the regulations were less uniform. These include statements on the lack of community input, on the insufficiency of regulatory provisions addressing liability, on the lack of restrictions in the case of a future facility expansion, and on the inadequacy of LMFA in general. An example of an individual challenging the normative legitimacy of regulatory adequacy based on the lack of comprehensiveness, as opposed to a lack of enforcement, is:

“You guys need to change your standards” (person B6)

Technology is the fifth legitimacy form more frequently stated by the community opposing the facility. Of the 26 text units, legitimacy is challenged most on a normative basis (11 text units, 42%) and on a cognitive basis (11 text units, 42%), which together account for 84% of the text units on technology. The normative basis for legitimacy assessment is based on societal norms and values, with norms specifying “how things should be done” (Scott, 2001). In the context of the proposed facility technology, how
things should be done refer to the technical aspects of what the facility is and how the
design, installations and equipment are supposed to work.

In the dataset the local community main focus is on challenging the legitimacy of the
manure application methods, which account for half of the text units on normative
legitimacy. The remaining statements include different aspects of the facility’s
technology, the use of antibiotics and the concentration of animals being two of the
challenged areas. An example of a statement contesting the facility’s technological
normative legitimacy is:

“Highly erodible ground, to my knowledge, has to be no-tilled. This is a tillage
practice that will be incorporating this manure” (person A6a)

The cognitive legitimacy of the technology employed is weakened on multiple topics that
do not have a common unifying theme, except for technology itself. Topics include the
understanding that manure incorporation is inefficient, that the concentration of animals
is too high and that the facility per se represents a risk. While the normative illegitimacy
reflects the understanding that the facility processes are inadequate and represent a
nuisance, cognitive legitimacy indicates how this understanding is rooted into the
assumptions and beliefs of the local community.

Community is the sixth most frequent legitimacy theme expressed by the local
community and refers to statements that have as the subject the community where the
facility is being proposed. The statements challenge either normative legitimacy (15 text
units, 60%) or pragmatic legitimacy (10 text units, 40%) and total 25 text units. In the statements based on normative legitimacy, speakers mainly address the lack of consideration for the neighbors, the owner’s initiative of building a facility with potential impacts on the residents of the community being pointed as a wrongful behavior. As stated by one community resident opposing the proposal:

“My question is why would anyone want to take away the gift of clean air and water from friends and neighbors to benefit just one family's posterity?” (person C49)

As for the statements challenging pragmatic legitimacy, these address the direct negative impact and potential losses the community would endure due to the facility operation. The impacts cited present a significant variability and include general references to the community as well as specific issues, such as a high concentration of facilities in the town, the lack of economic benefits generated to the county, the potential health risks and the divide among community members, for example. Even though economics and health constitute legitimacy themes per se, in this case the statements were characterized by a strong community component. That is, instead of statements focused on health risks or on economic impacts, these are focused and based on the community existence and well being, the health risks and the economic impact being two different ways among several that could potentially affect the community, positively or negatively.

Information and location are the seventh most frequent legitimacy themes questioned by the local community. Information is strongly challenged on a normative basis. Of the

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total 23 text units mentioned, 18 units or 78% address normative legitimacy, where the statements are divided into two groups: the first one, which includes most of the text units, challenges normative legitimacy due to the lack of information provided by the facility applicants; and the second one challenges normative legitimacy due to incorrect information given in the application process. Examples challenging the lack of information include questioning insufficient information on acres location for manure recycling, the unavailability to the public of the facility’s waste management plan, and insufficient information provided to the government in the decision process. As mentioned by one speaker:

“You haven't notified the public where these acres [for animal waste] are. After all, the people here all live in the area” (person A6b)

The location legitimacy theme is expressed in 23 text units. Legitimacy is challenged mostly on a pragmatic basis (14 text units, 61%), with speakers emphasizing the facility closeness, either to the community member residences or to the local school. Whether the problem with a short distance is the presence of odor or the landscape view change, for example, this is not mentioned. This quote illustrates a speaker challenging the legitimacy of the location on a pragmatic basis:

“One of the biggest concerns for the community here is our school and the distance it is from the facility” (person C4)

The ninth most frequent legitimacy theme questioned by the local community is the environment (13 text units). The legitimacy of the facility on the environment subject is
strongly challenged on a normative basis (13 text units, 93%). The community residents understand that the ground, through erosion and manure contamination, the rivers and, on less specific terms, the nature’s balance, will be negatively affected by the livestock facility presence. As stated by on stakeholder:

“You're going to have these antibiotics flowing with this water... The wild animals will be drinking them” (person C5)

Management and recreation are the tenth most frequent legitimacy themes. The normative illegitimacy of management occurs in 8 out 12 text units, or 67% of the time. The legitimacy of the management of the CAFO facility is questioned over a number of themes. For example, of specific concern is the absence of monitoring by the managers of antibiotic runoff. While of general concern is the lack of managerial specificity beyond a very incomprehensive livestock statute. A community resident stated:

“There's no requirement. You can just pollute the hell out of the air and nobody cares” (person C20)

Recreation is characterized by the questioning of legitimacy primarily on a pragmatic basis (11 of the 12 text units on recreation). Stakeholders exemplify their concerns placing emphasis on the negative impacts on recreational activities, such as fishing, hunting, outdoor cooking, or horse riding, for example. One statement questioning pragmatic legitimacy on recreation was:

“We will not be sitting out fishing. We won't be -- there's a lot of things we will not be able to do” (person C7)
Consultants

The consultants address thirteen different legitimacy themes to convey the proposed facility legitimacy (Table 9). The thirteen legitimacy themes include all 183 consultant text units and, as with the local community, the frequencies associated with each theme are not uniform. While technology and management have 56 (31%) and 54 (30%) text units of the total, respectively, odor, precedent, health, economics or community each have only one text unit (approximately 1% each) of the total text units. The analysis hereupon will focus on the four most frequent legitimacy themes (technology, management, location and regulation compliance), which together account for 85% of the consultants text units.

<table>
<thead>
<tr>
<th>Legitimacy Theme</th>
<th>Count</th>
<th>%</th>
<th>Cumulative %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 technology</td>
<td>56</td>
<td>31%</td>
<td>31%</td>
</tr>
<tr>
<td>2 management</td>
<td>54</td>
<td>30%</td>
<td>60%</td>
</tr>
<tr>
<td>3 location</td>
<td>34</td>
<td>19%</td>
<td>79%</td>
</tr>
<tr>
<td>4 regulation compliance</td>
<td>11</td>
<td>6%</td>
<td>85%</td>
</tr>
<tr>
<td>5 regulatory adequacy</td>
<td>8</td>
<td>4%</td>
<td>89%</td>
</tr>
<tr>
<td>6 management pre-operation</td>
<td>8</td>
<td>4%</td>
<td>93%</td>
</tr>
<tr>
<td>7 information</td>
<td>4</td>
<td>2%</td>
<td>96%</td>
</tr>
<tr>
<td>8 traffic</td>
<td>3</td>
<td>2%</td>
<td>97%</td>
</tr>
<tr>
<td>9 odor</td>
<td>1</td>
<td>1%</td>
<td>98%</td>
</tr>
<tr>
<td>10 precedent</td>
<td>1</td>
<td>1%</td>
<td>98%</td>
</tr>
<tr>
<td>11 health</td>
<td>1</td>
<td>1%</td>
<td>99%</td>
</tr>
<tr>
<td>12 economics</td>
<td>1</td>
<td>1%</td>
<td>99%</td>
</tr>
<tr>
<td>13 community</td>
<td>1</td>
<td>1%</td>
<td>100%</td>
</tr>
<tr>
<td>total</td>
<td>183</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Technology is the most frequent legitimacy theme utilized by the consultants to convey the legitimacy of the proposed facility, summing up 56 text units. In promoting the
legitimacy of the facility due to adequate technology adoption, the consultants base their statements mostly on the regulative and normative legitimacy bases, which account for 32 (57%) and 16 (29%) of the text units, respectively (Table 10).

<table>
<thead>
<tr>
<th>Legitimacy Theme</th>
<th>Count</th>
<th>Pragmatic</th>
<th>Regulative</th>
<th>Normative</th>
<th>Cognitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 technology</td>
<td>56</td>
<td>1 (2%)</td>
<td>32 (57%)</td>
<td>16 (29%)</td>
<td>7 (13%)</td>
</tr>
<tr>
<td>2 management</td>
<td>54</td>
<td>2 (4%)</td>
<td>19 (35%)</td>
<td>31 (57%)</td>
<td>2 (4%)</td>
</tr>
<tr>
<td>3 location</td>
<td>34</td>
<td>-</td>
<td>31 (91%)</td>
<td>2 (6%)</td>
<td>1 (3%)</td>
</tr>
<tr>
<td>4 regulation compliance</td>
<td>11</td>
<td>-</td>
<td>11 (100%)</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

n = 155

Statements based on regulative legitimacy aim to convey legitimacy through compliance with the law. In the case of the technology legitimacy theme, the focus is on demonstrating how technical solutions bring compliance to the regulations set by the Livestock Management Facilities Act (LMFA). All the statements have in common the use of adequate technical employment aimed at preventing potential hazards and nuisances provoked by the waste generated by the livestock facility. The technical solutions are meant to be employed either locally at the facility, such as the use of borings to evaluate the soil permeability, the use of reinforced concrete for waste storage, and the use of tree buffers, or are meant to be used outside the facility, in the surrounding fields during the application of waste into the ground.

The livestock waste byproduct works as a crop fertilizer. Important technologies are deployed for; applying manure to farm ground manure injection directly into the soil, evaluating nutrient levels pre and post manure application, applying manure to specific
nutrient target levels, active monitoring for equipment performance to ensure safe application and reduce the risk of an environmental spill (e.g., auto shut-offs in the case of a leakage). In the following quote one consultant provides a representative example of a technical resolution to convey the legitimacy of the facility through regulatory compliance (also see Table 11):

“Leaching, siting Criteria 5 [of the LMFA], the facility will be designed so as to prevent a release of livestock waste ... and constructed with solid concrete reinforced with grade 60 steel rebar” (person C3a)

<table>
<thead>
<tr>
<th>Legitimacy Theme</th>
<th>Legitimacy Basis</th>
<th>Illustrative Quote</th>
</tr>
</thead>
<tbody>
<tr>
<td>technology</td>
<td>regulative</td>
<td>“Leaching, siting Criteria 5, the facility will be designed so as to prevent a release of livestock waste ... and constructed with solid concrete reinforced with grade 60 steel rebar” (C3a)</td>
</tr>
<tr>
<td>technology</td>
<td>normative</td>
<td>“They [the owners] are altering it [the fertilizer] to a different source, a natural source, not a commercial source” (C3b)</td>
</tr>
<tr>
<td>management</td>
<td>normative</td>
<td>“The goal of any Waste Management Plan is to utilize the waste produced at approved agronomic loading rates that meet the nutrient needs of locally grown crops in an environmentally sound fashion” (A4a)</td>
</tr>
<tr>
<td>management</td>
<td>regulative</td>
<td>“The facility will prepare, maintain and implement a waste management plan” (B3)</td>
</tr>
<tr>
<td>location</td>
<td>regulative</td>
<td>“This facility is in compliance with all setbacks, and that is probably the number one odor control that can be utilized by facilities” (C3c)</td>
</tr>
<tr>
<td>regulation</td>
<td>regulative</td>
<td>“We’ve been putting the plans together and doing all the paperwork to meet all the requirements of the Livestock Management Facility Act” (A4b)</td>
</tr>
</tbody>
</table>

The potential hazards and nuisances associated with livestock waste are the major motivation behind the technical proposals made by the consultants (and farmers). The normative dimension conveying technical legitimacy mainly refers to standards and technical actions that will be executed during the facility’s construction and operation. It
also explains, to a lesser extent, why a technical aspect of the facility operation is proper or desirable. Interestingly the technical proposals by the consultants mentioned in the normative text units are similar to those that correspond to regulative legitimacy. The difference is that normative legitimacy statements list the technologies in the context of its purpose and need, while regulative legitimacy statements use technical procedures as the way to comply with the applicable regulations. Examples of technical procedures proposed by the consultants include the direct injection of the facility waste into the ground, the use of soil evaluation, contracting a professional for the waste application and the use of a pit underneath the facility reducing the contact of the waste with the air. With respect to statements explaining the desirability of a technical procedure, there is the claim that the livestock waste is a natural fertilizer as opposed to a commercial one. As stated by one consultant:

“They [the owners] are altering it [the fertilizer] to a different source, a natural source, not a commercial source” (person C3b)

The second most common legitimacy theme used by the consultants is management, and it is associated predominantly to normative and regulative legitimacy. Under management are the managerial plans and decisions proposed by the consultants for the livestock operation. Of the 54 text units addressing the management of the facility, most attempt to convey the legitimacy of the facility on a normative basis (31 text units, 57%), followed by the group of text units addressing the facility’s legitimacy on a regulative basis (19 text units, 35%).
The major subject associated to text units addressing normative legitimacy is the management of livestock waste. The consultants either focus on specific actions that will be taken or base their statements on what would be the “right thing to do”. These statements of “the right thing to do” by their normative nature may not be aligned with the normative expectations of the community. Examples of managerial actions include a low frequency of waste applications onto the fields and the record keeping of where, when and how much of the waste was applied in each field. Consultants emphasize, for example, the adoption and the commitment of best management practices and the adequateness of the waste management plans, as to what is preferred and desirable. An example from one of the consultants is as follows:

“The goal of any Waste Management Plan is to utilize the waste produced at approved agronomic loading rates that meet the nutrient needs of locally grown crops in an environmentally sound fashion” (person A4a)

The other topic often addressed is the management of dead animals. Consultants continually refer to managerial actions to be undertaken, like the immediate removal of dead animals from the facility and the possible use of composting for the animals discard.

As it is the case with the text units based on normative legitimacy, the management of livestock waste is the common subject across the statements based on regulative legitimacy. The regulative statements focus on communicating how the managerial procedures that the facility will adopt bring compliance with the pertinent legal requirements stated by the LMFA. The commitments made by the consultants include the
pursuit of a managerial certification recommended by the Illinois Department of Agriculture and the execution of a waste management plan, both listed under the LMFA. As stated by one consultant:

“The facility will prepare, maintain and implement a waste management plan”
(person B3)

The third most common legitimacy theme present in the consultants’ statements is location, which is the subject of 34 text units. Also, within this set, the pursuit of legitimacy is mainly done on a regulative basis, regulative legitimacy being the legitimacy basis in 31 text units or 91% of the text units. Explaining the location of the facility is used by the consultants to show compliance with respect to several LMFA criteria, the proper location being enough to either demonstrate fully compliance with certain criteria or to partially demonstrate compliance with other ones. Consultants use a variety of techniques depending on which of the Criteria are relevant to demonstrate the appropriateness of the siting choice. For example, detailed maps are employed to show the quality of the chosen location when a criterion requires minimum distances from floodplains or minimum distances from the individual residences (setbacks). On the other hand consultants simply make reference to the setbacks when criteria address items not specific to the exact location. For example, in the case of odor, when one criterion demands reasonable odor control plans, the consultants mention the facility’s adequate setbacks as a way to prevent odor. As stated by one consultant:

“This facility is in compliance with all setbacks, and that is probably the number one odor control that can be utilized by facilities” (C3c)
Regulation compliance, corresponding to 11 text units, is the fourth most common legitimacy theme used by the consultants in addressing the legitimacy of the facility and are all based on regulative legitimacy. This legitimacy theme refers to the statements affirming the commitment of the firm with the compliance of the regulations. The statements do not focus on any specific area of the applicable regulations, which in the present case are listed within the Livestock Management Facility Act (LMFA), but convey the legitimacy of the proposed operation because of the commitment in complying with the regulations addressing livestock operations. The following statement made by a consultant illustrates the regulation compliance theme:

“We've been putting the plans together and doing all the paperwork to meet all the requirements of the Livestock Management Facility Act” (person A4b)

In the regulatory compliance group of text units the focus is not on a specific requirement or on how a requirement is achieved, but assures that facility management is committed to, and the facility complies with, the applicable regulations. The specificity of the regulatory compliance text units is much weaker than those made about technology, management or location themes, even though both sets concern regulative legitimacy. For example, with respect to the location theme, facility management demonstrates regulative legitimacy by documenting the specific legal setbacks attained by the facility.
ANALYSIS

Local Community

The local community challenges the legitimacy of the proposed facility over a wide array of legitimacy themes. The eleven major legitimacy themes identified in the local community encompass 90% of the statements expressed by this stakeholder. Health, odor, economics, regulatory adequacy, technology, community, information, location, environment, management, and recreation constitute a numerous and diverse set, representative of the distinct areas that a firm, in this case the livestock facility, can have weakened legitimacy. The themes questioned present a significant variability and reflects the multiplicity of impacts and relations associated to a firm. For example, the local community evaluates the facility’s technology and the related regulations, and also has self interested assessments, as it is the case of health or of economic impacts.

The community challenges the legitimacy of these themes mainly on two legitimacy bases. The pragmatic and the normative basis correspond respectively to 139 (48%) and 109 (38%) of the 290 text units stated by this stakeholder (Figure 4). The number of cognitive legitimacy text units is 36 (12%) and, with the smallest number of statements, regulative legitimacy corresponds to six text units (2%). The concentration of text units on two legitimacy themes contrasts with the quantity and variability of legitimacy themes stated by the local community.
The examination of the legitimacy basis most used within each theme also shows the predominance of pragmatic and normative legitimacy within the local community statements (Figure 5). Of the eleven legitimacy themes discussed by the local community, in all but one either pragmatic or either normative is the predominant legitimacy basis. Normative legitimacy has the higher occurrence and is the most used legitimacy basis within a legitimacy theme six times. Pragmatic legitimacy occurs five times as the predominant legitimacy basis within a theme, having the second highest frequency. In technology, the only theme that differs from this pattern, the predominant legitimacy bases are both normative and cognitive, each accounting for 42% of this theme text units. Regulative legitimacy does not occur as the predominant legitimacy basis in any of the eleven legitimacy themes.

FIGURE 4
Legitimacy Basis Frequency of the Eleven Legitimacy Themes,
Local Community (n = 290)

The number of legitimacy themes is eleven, but the total number of times a legitimacy basis is predominant on a theme totals twelve due to the fact that normative and cognitive are together the predominant legitimacy bases in technology.
The occurrence of pragmatic and normative legitimacy is not evenly distributed within each legitimacy theme (Table 7). Instead, ten out of the eleven legitimacy themes are characterized either by the presence of pragmatic legitimacy or by the presence of normative legitimacy. This concentration in the use of either pragmatic or normative legitimacy defines two main groups of legitimacy themes within the local community. A legitimacy assessment strongly based on the individuals’ self-interested evaluations characterizes the pragmatic group, which have five legitimacy themes. Evaluations strongly based on the norms and values pertinent to the community residents characterize the normative group, which also have five legitimacy themes. Each group has a high occurrence of either the pragmatic or either the normative legitimacy basis within each theme, respectively.

Regulatory adequacy, environment, information, management, and community are the five themes where normative legitimacy is the unique predominant legitimacy basis. The
average occurrence of normative text units is of 80% per theme, the higher frequency being 97% on regulatory adequacy and the lower frequency being 60% on community. The normative group did not include technology, a theme that has normative and cognitive legitimacy as the predominant legitimacy bases, each one with 42% of the text units. It would be inaccurate to include technology in a group characterized by the normative basis mainly presence.

Recreation, economics, odor, health, and location are the five themes that have pragmatic legitimacy as the predominant legitimacy basis. The average occurrence of pragmatic text units is of 77% per theme. Recreation has the higher frequency of pragmatic legitimacy text units, corresponding to 92%, and location has the lower frequency of text units, corresponding to 61%.

The trilinear plot (Friendly, 2000) visually illustrates the two groups of legitimacy themes characterized by a predominant use of either pragmatic legitimacy or normative legitimacy (Figure 6). In this research context, each point inside the trilinear plot represents the legitimacy basis composition of one legitimacy theme and each vertex correspond to pragmatic, normative or cognitive legitimacy. The closer the location of a point to one of the three vertexes, the higher is the proportion of that legitimacy basis use within the theme. The further the location of a point from one of the three vertexes, the lesser is the proportion of that legitimacy basis use within the theme. Regulatory adequacy, for example, which has 97% of the text units based on normative legitimacy, is the closest theme to the normative vertex. And recreation, right on the pragmatic vertex,
has all statements based on pragmatic, and none on either normative or cognitive legitimacy. As for information, community, economics, and recreation, all these legitimacy themes have zero statements based on cognitive evaluations. Most of the legitimacy themes show some combination of at least two legitimacy bases and the dotted lines perpendicular to the vertex indicate the percentage of that vertex legitimacy basis use within the legitimacy theme.

A limitation of the trilinear plot is the restriction of using just three categories to locate a point. The graphic representation excluded regulative legitimacy due to the limited occurrence of this legitimacy basis. Regulative legitimacy only had two text units in location, three text units in information, and one text unit in recreation for the local community stakeholder. For these three legitimacy themes the composition of pragmatic, normative and cognitive legitimacy was normalized to one. Therefore, recreation, which has 11 text units (92%) based on pragmatic legitimacy and one text unit (8%) based on
regulative legitimacy, is located right on the pragmatic vertex, corresponding to 100% of pragmatic statements.

The themes predominantly composed by pragmatic evaluations constitute a uniform group, with similar characteristics. Each theme, except for location, specifically refers to an impact the presence of the livestock facility determines over the community. The potential impact on health, the odor the facility may generate, the economic impacts, as reduced property values, and the diminishment of the quality in recreation are direct effects the community residents understand the facility imposes. All these themes have in common the community being subject to effects generated by the livestock facility operation. As for the location theme, the text units address the proximity of the facility, whether the short distance refers to the residencies or to the schools. Even though proximity does not define an effect and several different reasons might underlie the opposition to a close location, individuals do express in their self-interest the inappropriateness of the close facility location.

The fact that a group of themes is associated to the pragmatic legitimacy basis evidences the important role of the local community self interested evaluations in assessing the legitimacy of the livestock facility. This relevance is also supported in terms of occurrence, as pragmatic legitimacy is not only the predominant legitimacy basis in five themes, but the three legitimacy themes most frequently stated by the local community - health, odor and economics – belong to this group. For managers, the themes characterized by a strong pragmatic legitimacy component constitutes a major source to
the industry illegitimacy that deserves attention and explains, in part, the opposition by the local community to agree in receiving a livestock facility.

The other normative group of legitimacy themes is a diverse set. The themes are not centered on just one stakeholder as in the pragmatic group, where the themes refer to the effects the livestock facility determines on the local community. The definition of normative legitimacy emphasizes the use of values to indicate what is desirable and the use of norms to indicate how things should be done. The normative legitimacy definition results in a broader scope of themes assessed by the local community. The evaluations have, in part, the community per se as a theme, but, in addition, the evaluations also address the adequateness of the institutional environment, the adequateness of the firm actions, and the adequateness of the implications to the natural environment.

The questioning of the institutional environment refers to the regulatory adequacy. Regulatory adequacy is the most frequent theme within the normative group and evidences the community understanding of the inadequacy of the regulatory specifications applicable to the livestock industry. The regulations lack of comprehensiveness or the insufficient enforcement explains the local community perception of the regulations inadequacy.

As for the firm actions, the themes questioned are information and management. These two themes are part of the firm array of actions. The local community questions the information provided either because it is insufficient or because it is incorrect.
Management is not questioned on a specific issue, but on different areas of operation, as it is the case in the management of the facility waste or the restriction of the firm managerial activities only to the regulatory requirements scope, for example. In addition to addressing information and management, another relevant normative legitimacy theme challenged by the local community over the firm actions is technology. The local community questions mainly the waste application methods. Even though normative legitimacy only does not correspond to the majority of the statements in technology, normative legitimacy has the same frequency of cognitive legitimacy statements, with both corresponding together to 84% of the text units within technology.

The diversity of themes under the normative legitimacy group becomes very evident when noting the different stakeholders to which the legitimacy themes relate. In the pragmatic legitimacy group the emphasis was on the effects the facility would impose on the local community. However, within the normative legitimacy group the themes are associated to stakeholders that include, besides the local community, the government, the farm managers and environmental activists groups. In the case of challenging community legitimacy, the related stakeholder is the local community itself, but for the other themes under the normative legitimacy group, the same does not hold. When the local community challenges the adequateness of the regulations, the related stakeholder is the government, which, given the nature of the legitimacy theme, could be more specifically referred to as the policy makers. In the case of information, management and technology legitimacy, these three themes are under the scope of the firm actions, which the consultants and managers design and implement. And for environmental legitimacy, even
though in the data analyzed there are no individuals representing environmentalists groups, the environmental theme is typically associated the environmental activist stakeholder.

The two groups of legitimacy themes characterized by a strong presence of either pragmatic or normative legitimacy contrast with the lesser use of text units based on cognitive or regulative legitimacy. Technology is the only legitimacy theme where text units questioning legitimacy on a cognitive basis are as frequent as text units questioning legitimacy on a normative basis. The relatively high frequency of cognitive statements reflects the community taken-for-granted understanding of the livestock facility technology and operational procedures as improper. As far as regulative legitimacy, as showed in Figure 5, it is not a predominant legitimacy basis on the themes questioned by the local community and corresponds to just six text units of the 290 under analysis (Figure 4).

Consultants

The consultants support the legitimacy of the proposed livestock operation through four major legitimacy themes: technology, management, location, and regulation compliance. The four major legitimacy themes correspond to 155 of the consultants total 183 text units. The two most frequent themes, technology and management, together account for 60% of the consultant’s total text units, each one having 31% and 30% of the text units respectively. Location and regulation compliance, the third and fourth most frequent legitimacy themes, correspond respectively to 19% and 6% of the text units.
The consultants concentrate the legitimacy statements on less legitimacy themes in comparison to the local community. The four legitimacy themes correspond to 85% of the total consultants’ statements. The local community, on the other hand, has nine themes corresponding to 83% of the legitimacy statements.

The four legitimacy bases are present and occur with an uneven distribution of frequencies among the four major legitimacy themes. Regulative and normative legitimacy are the predominant legitimacy bases, corresponding to 93 (60%) and 49 (32%) of the 155 text units the consultants use in supporting the facility legitimacy (Figure 7). As for cognitive legitimacy and pragmatic legitimacy, both legitimacy bases have a reduced importance within the consultants’ stakeholder, the number of text units being respectively 10 (6%) and 3 (2%) and summing together less than 10% of the text units within the four major themes.
The predominance of the regulative and normative legitimacy bases within the consultants’ statements can also be evidenced by the legitimacy basis most used within each theme (Figure 8). Regulative legitimacy is the top legitimacy basis used within a legitimacy theme three times. Regulative legitimacy correspond to 57% of the text units in technology, 91% of the text units in location, and 100% of the text units in regulation compliance (Table 10). Normative legitimacy is the top legitimacy basis used in management, corresponding to 57% of the statements within this legitimacy theme. Cognitive and pragmatic legitimacy, besides summing together less than 10% of the statements within the four major themes, are not the predominant legitimacy basis in any of the legitimacy themes.

The distribution of the legitimacy bases per theme defines two distinct groups within the local community. The themes with a strong presence of pragmatic legitimacy constitute one group and the themes with a strong presence of normative legitimacy constitute a
second group. In the two groups, the average occurrence of pragmatic and normative legitimacy is 77% and 80%, respectively. That is, the most frequent legitimacy basis occurs by a vast margin when compared to the frequencies of the second, third or fourth legitimacy basis. Within the consultants’ stakeholder, who has lesser themes, such a pattern is not so clearly defined. Of the four themes, location and regulatory compliance do have a high frequency of the regulative legitimacy basis, corresponding to 91% and 100% of the text units respectively. But within technology and management, the first has regulative legitimacy as the more frequent basis with 57% of the text units, while management has normative legitimacy as the more frequent basis with 57% of the text units.

The distribution of legitimacy themes by the legitimacy bases can be visualized in the trilinear plot (Figure 9), with data input from Table 10. As in the local community, one legitimacy basis was excluded. At this time pragmatic legitimacy was the basis excluded, as it corresponds to just three statements of the 155 text units. The statements corresponding to the regulative, normative and cognitive legitimacy bases were normalized to one. Location and regulatory compliance, which have a high component of regulative legitimacy, are located close to each other and closely to the regulative vertex. The legitimacy themes technology and management, which are not composed exclusively or almost exclusively by one legitimacy basis, are located in more intermediate positions between the regulative and the normative vertices.
The use and frequency of the legitimacy bases and legitimacy themes indicates two characteristics of how the consultants pursue the legitimacy of the proposed livestock facility. First, the consultants place great emphasis on regulative legitimacy. Several measures indicate the importance of regulative legitimacy. (1) 60% of the consultants’ statements correspond to regulative legitimacy, (2) regulative legitimacy is the most used basis within three out of the consultants’ four legitimacy themes, and (3) regulative legitimacy has a strong presence on two themes, location (91%) and regulation compliance (100%). Demonstrating commitment to the regulations and compliance with the LMFA regulatory standards is a central piece of the consultants efforts in pursuing the facility’s legitimacy. It is also symptomatic of the great emphasis placed on regulative legitimacy the fact that the fourth most frequent theme, regulation compliance, congregates statements affirming the firm commitment in following the regulations applicable to the operation of a livestock facility.

FIGURE 9
Consultants Legitimacy Themes Distribution According to the Legitimacy Bases Occurrence

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Second, the consultants place great emphasis on the operation of the facility. The two most frequent legitimacy themes, technology and management, which together account for 60% of the consultant’s total statements, compliment each other in defining what is the operation proposed and how it will be operated. The technology specifies what are the equipments, the design and the specifications of the facility. Management defines the procedures, the personnel training and the routines adopted for the facility operation.

The emphasis placed on the operation in order to legitimize the facility is also evident when considering the variety of stakeholders associated to the local community statements. When the local community questions regulative adequacy, the theme relates directly to the government stakeholder. The environment theme relates to the environmentalists’ stakeholder. In the case of management and information, the stakeholders under focus are the farmer and the manager. And in the case of economics or odor, the stakeholder is the local community per se. This diversity does not hold for the firm. In the four legitimacy themes analyzed – technology, management, location and regulation compliance - the focal stakeholder is the one in a managerial position, as it is the case of the farmer or of the consultants.

Local Community and Legitimacy State

The analysis of the local community reveals legitimacy weaknesses of the livestock industry in Illinois. The industry is challenged on eleven different legitimacy themes, which are primarily distributed into two groups, one group characterized by themes with a strong occurrence of pragmatic legitimacy and the other group characterized by the
predominance of normative legitimacy. The legitimacy themes with a strong occurrence of pragmatic legitimacy – health, odor, economics, location and recreation - evidence the important role of self-interested evaluations of the local community in assessing legitimacy. It is a group of themes characterized by an inward perspective: the perceptions of how a livestock facility would impact the individuals within the community where the facility construction was proposed.

The themes characterized by a strong presence of normative legitimacy – regulatory adequacy, community, information, environment and management – compose a diverse group and, compared to the pragmatic group, these themes have an outward perspective. This diversity and outward perspective is reflected by the multiple stakeholders associated to the legitimacy themes. Excluding the community theme, regulatory adequacy is associated to the government; information and management are associated to the firm; and concerns with the natural environment are associated to environmental activist groups. Technology is the only legitimacy theme not belonging to neither one of the two groups, as the predominant legitimacy bases are both normative and cognitive legitimacy. For the text units associated to the normative basis, the technology theme reinforces the outward perspective of the themes under the normative legitimacy group, as technology is associated to the facility operation. As for the cognitive basis, the local community text units reveal the taken-for-granted understanding of the facility technology inadequateness.
Consultants and Legitimacy Strategy

The consultants utilize the public informational meeting venue to convey the legitimacy of the proposals. The local community principally challenges the legitimacy of the proposed facilities in the meetings. The consultants pursue legitimacy from a regulative base, while the community legitimacy concerns arise from pragmatic and normative bases. Additionally, the consultants focus on the proposed operation itself, with technology and management as the major legitimacy themes, while the community concerns itself with odor, health, and economics. The consultants present a lower diversity of themes and of references to other stakeholders in comparison to the community legitimacy profile. Technology, management, location, and regulation compliance comprise 85% of the consultants’ statements and all have the proposed facility as the subject.

In order to execute the facility proposal, a necessary step for the farmer is to obtain legal approval from the Illinois Department of Agriculture, the main regulatory body overseeing the construction and expansion of livestock facilities in the State of Illinois. The strategy of the consultants of pursuing regulative legitimacy and of focusing on the management and technology of the proposed facility is in line with the demands of the regulatory institutional setting, as the eight criteria stated in the LMFA are the main reference in the process of approval or denial of a new facility construction. However, while the government is a fundamental stakeholder that needs to be considered, the strategy of the consultants of standing by the regulations and centering on the
management and technology of the proposed facility is ineffective in addressing the legitimacy challenges posed by another fundamental stakeholder, the local community.

The reasons why the emphasis on regulative legitimacy and on the management and technology of the proposed facility are ineffective in addressing the local community legitimacy challenges are distinct. Contrasting with the major role attributed to regulative legitimacy by the consultants in supporting the proposed operation, the local community challenges the legitimacy of the regulations per se. Regulatory adequacy, meaning the adequateness of the prevailing legal system the livestock industry abides by, is the forth most common legitimacy theme challenged by the local community. More ever, within the local community group of normative legitimacy themes, regulatory adequacy is the most frequent theme stated. While the consultants promote the facility proposal legitimacy on a regulative basis, through demonstrations of compliance with the standing regulations, the local community places little importance on the regulations as a reference for legitimating the proposed operation.

Regarding the significant presence of the management and technology legitimacy themes within the consultants discourse, the focus on the facility operation is ineffective in communicating reduced or non-significant effects of the proposed operation over the local community. The local community perceives, despite the consultants’ emphasis on the facility operation technological and managerial resolutions, negative externalities will be present and pertinent. Negative externalities effects associated to modern livestock production are reflected in the group of pragmatic legitimacy themes, which includes, by
order of frequency, health, odor, economics, location and recreation. The fact that technology is a legitimacy theme challenged on a cognitive basis by the local community also corroborates that the strategy of focusing on the facility operation is not effective. The high presence of text units challenging technology legitimacy on a cognitive basis indicates that the local community takes for granted the inaptness of the proposed technology as a dependable mean to secure the surrounding environment from the facility externalities.

Supporting a Legitimacy Theme: The Legitimacy Agent

A beneficial outcome of the inductive methodology was the revelation about the role and importance of the legitimacy agent. Even though the analysis of an authoritative reference is present in several studies (Cohen and Dean, 2005; Pollock and Rindova, 2003; Singh et al, 1986; Zuckerman, 1999) only two make the distinction between a legitimacy theme and a legitimacy agent. As a result there is no a priori guidance of how the legitimizing agent would present itself within the context of a strategic legitimacy assessment.

Eesley and Lenox (2006) point to the difference between the legitimacy of an entity and of an action, assessing how the legitimacy of the stakeholder (entity) and the legitimacy of the request (action) elicited positive firm responses. In a more detailed study of the actors conferring legitimacy, Maguire et al (2004) identified that a critical stage for successful institutional entrepreneurship in emerging fields was the occupation, by individuals, of “subject positions” widely legitimate across multiple stakeholders, subject
position referring “not only to formal, bureaucratic position, but also to all the socially constructed and legitimated identities available in a field” (Maguire et al, 2004: 658).

In the case of the Illinois livestock industry the local community and the consultants make use of public institutions, governmental agencies, governmental standards, university affiliated institutions, professional associations, publications and individuals statuses (formal or informal) in supporting or challenging legitimacy themes. The stakeholders support the statements addressing legitimacy by referring to the Illinois Department of Agriculture, the Environmental Protection Agency, the American Public Health Association, publications from the University of Iowa and the University of Missouri, county maps defining flood areas and agricultural zones, and to the title of being an environmental engineer or a community member for a long time.

The frequency and the references used were specific to each constituency, and both the consultants and the local community would make use of an authoritative reference in conjunction with a statement on a legitimacy theme. In terms of frequency, the use of a legitimize reference was more common by the consultants in comparison to the local community. The consultants used a legitimizing reference in 25% of the text units, while the community employed them in only 5%. The local community focused either on publications or on an individual’s characteristic, such as being a community member for many years or having first hand experiences on a specific subject. The consultants, in line with the strong presence of regulative legitimacy statements characterizing this stakeholder profile, often made reference to governmental agencies or governmental
established standards. The use of a governmental reference accounted for 37 (82%) of the 45 text units made by the consultants using a legitimacy agent, with the Illinois Department of Agriculture being the most used agency.

The importance of these agents is remarkable in the context of the Illinois livestock industry legitimacy analysis. But still it is unclear how effective the use of legitimizing agents are on swaying opinion towards or away from legitimacy. Legitimacy agents are employed prolifically by the consultants through out the statements addressing the proposed facility legitimacy. Legitimacy agents are associated to the four most frequent consultant’s legitimacy themes (technology, management, location, regulation compliance) and occur with all four legitimacy bases – pragmatic, regulative, normative and cognitive. The use of an authoritative reference by the consultants is most common in supporting the legitimacy of the facility location, followed by the technology and management legitimacy themes. As for the legitimacy bases, the most used in the overall consultants text units are the same mostly associated to the use of an agent: regulative and normative legitimacy. With respect to the local community, economics, information, location, health, odor and environment are the legitimacy themes associated to the use of an agent. And pragmatic and normative legitimacy, the predominant legitimacy bases occurring within local community text units, are the legitimacy bases associated to the use of a legitimacy agent (Table 12).
The case of the Illinois livestock industry clearly shows how a legitimacy agent is critical for stakeholders when arguing for or against the legitimacy of the facility. Interestingly the research on the Illinois livestock industry also reveals that the process of (il)legitimization explicitly entails a triadic process involving not only specific themes and specific bases, but also specific legitimizing agents. From these insights the following definition of a legitimizing agent follows:

A *Legitimacy Agent* is a position (individual) or an entity (organizational) associated with a set of socially constructed meanings that represents and communicates the legitimacy of an individual or an organization to relevant stakeholders.
Legitimacy agent is a position or an entity in the sense that the representation and the communication of legitimacy can occur either at the level of the individual or at the level of institutions\(^5\). This position or entity does not stand by themselves, but are associated to a set of socially constructed meanings that are the product of social interaction and correspond to shared beliefs of some social group (Berger and Luckmann, 1967; Suchman, 1995). Additionally, the representation and the communication of legitimacy can be with respect to a specific or to multiple characteristics of an individual or of an organization, with the position or the entity being either of a formal or informal, private or public nature. The specification of relevant stakeholders delineates an audience for the legitimacy agent.

Therefore, when the consultants support the legitimacy of the proposed facility stating: “The [Illinois] Department of Agriculture deems setbacks for the facility complete on September 10, 2003” (person A4c); the Illinois Department of Agriculture is the legitimacy agent communicating that a specific aspect of the facility proposed – the facility location – is regulative legitimate, as the proposal complies with the applicable regulations. The Illinois Department of Agriculture is the entity communicating the legitimacy of the facility proposal, the focal organization. As a formal institution and as part of the State government, the Illinois Department of Agriculture is associated, at least to some extent, to the preservation of the public interest. Contrasting with the formality of the Illinois Department of Agriculture as a legitimacy agent, the previous experience of a local community member supports the statement challenging the legitimacy of the facility proposal: “I know the odor is there because I have smelt it myself, and to say that it isn't

\(^5\) Maguire et al (2004) subject position definition suggests the agency at the level of the individual.
real, is not true” (person C22); the legitimacy agent in this case is the individuals’ experience. Having a first hand experience supports the statement challenging the information correctness on a normative basis.

While the legitimacy agent is present in several statements posed by the local community and the consultants and its importance as part of the legitimacy dispute is acknowledged, establishing the effectiveness of the legitimacy agents employed in the context of the Illinois livestock industry is beyond the scope of this work. However, a note can be made with respect to legitimacy agents the consultants made use of in supporting legitimacy statements. The main characteristic of the consultants legitimacy agent use was the reference to governmental agencies or governmental established standards, with the Illinois Department of Agriculture being the most used agency and associated to 17 of the 45 of the consultants’ text units. On the other hand, the local community strongly challenged the proposed facility legitimacy on regulatory adequacy, what suggests that, while focusing on governmental legitimacy agents was effective in attending the demands of the government as a stakeholder, that was not the case in attending the legitimacy demands from the local community stakeholder.

Addressing Legitimacy Challenges: Recommendations for the Industry

The legitimacy assessment method developed offers numerous insights into the challenges faced by the Illinois livestock industry. The local community’s active participation in the informational public meetings reinforces its significance and the need to address the legitimacy liabilities posed to the farmer, to the proposed facility and to the
livestock industry. This section presents recommendations for the farmer, consultants and industry representatives on managing and overcoming the legitimacy constraints faced by the modern livestock operations.

First, it is of fundamental importance the recognition by the livestock industry of the local community stakeholder relevancy. The local community is in a position of imposing direct operational costs and of undertaking actions affecting the industry reputation that could affect the relations to regulators and potential investors (Eesley and Lenox, 2006). The livestock industry attention to the local community legitimacy challenges would mean a tension diminishment and a decreased risk of unexpected demands affecting the industry performance.

The local community questions the legitimacy of the facility proposed over a variety of themes. The group of pragmatic legitimacy themes – health, odor, economics, location and recreation - indicates the several effects the local community expect to suffer from the facility operation and serves to the farmers and consultants as a road map of the more urgent themes being questioned. The legitimacy challenges on some of the themes, such as health, for example, could be attenuated by working closely a priori with the local community and through distribution of information on the relation of livestock facilities and health risks. It is important for the farmer, managers and consultants to understand that addressing the community legitimacy challenges through regulative legitimacy is not enough. Regulative legitimacy is one legitimacy basis and does not suffice to ensure the operation legitimacy.

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The diverse group characterized by normative legitimacy – regulatory adequacy, community, information, environment and management –, besides orientating what are the local community concerns, also brings legitimacy improvement opportunities at the immediate reach of the farmer and consultants. In the case of information, accurate and concise information organized in advance could drastically reduce legitimacy challenges due to incomplete or incorrect information. Correct and comprehensive information are especially important in the current situation where the regulative legitimacy of the proposed facility does not grant legitimacy to the livestock industry. Problems in communicating the facility operation prospects increase the uncertainty surrounding the siting process and catalyze potential legitimacy liabilities in an environment where the regulatory mark does not attend the local community demands.

Second, the livestock industry must develop a legitimacy agent. A legitimacy agent, whether at the level of formal institutions or at the level of the individual, has been shown to be an effective mean to communicate legitimacy (for example, Maguire et al, 2004; Zuckerman, 1999). Currently, the Illinois livestock industry does not have a legitimacy agent that could effectively convey legitimacy of the industry strengths to the local community. As of the proposal of new facilities, the major legitimacy agent employed by the consultants at the informational meetings is the Illinois Department of Agriculture (IDOA). Given the local community questioning of the regulations standards adequacy, the IDOA, a government agency standing by the applicable regulations, would not be expected to fulfill the role of an effective legitimacy agent. Additionally, the IDOA
mission advocacy for Illinois' agricultural industry is aligned primarily with the farmers as opposed to the local community.

At the level of the individual, successful legitimacy agency can be conveyed through the identification of livestock facilities that have a good relation with the neighbors and the local community. As there is enormous controversy and uncertainty around the pragmatic illegitimacy effects livestock facilities impose, individuals can relate to a neighbor testifying on his own positive experience in living close to an operation. At the level of institutions, a problem with making use of government agencies, such as the Environmental Protection Agency (EPA), for example, is that standard regulations do not correspond to the legitimacy demands from the local community. Also, in the example of the EPA, the natural environment is just one among several of the legitimacy themes challenged. At the local level, starting dialoguing and establishing a partnership with grass-roots associations standing for the local community demands would sign a proactive attitude from the industry that could ease opposition to livestock operations.

A more ambitious and most likely more effective legitimacy agent would be the establishment of a quality certification program. Especially in the case of industries with a large amount of small firms, as it is the case of the livestock industry, regulatory enforcement can be weak and organization among the numerous firms is costly and of limited feasibility. A quality certification program determining standards for operation aligned with the legitimacy themes the local community questions would be an incentive
for firm coordination and would signal to the local community the legitimacy of certified firms and the adequateness of the industry initiatives and practices.

A similar case to the livestock industry is the chemical industry (Hoffman, 1999). The chemical industry faced several legitimacy challenges based on environmental activism. In adapting to the new institutional setting, the industry evolved from a reactive position of standing strictly by the regulatory standards to a strikingly proactive posture, illustrated by the creation of the Responsible Care program by the Chemical Manufactures Association in 1990. The livestock industry response to the legitimacy challenges brought by the local community relates much to the initial stages of the chemical industry reactions. As in the case of the chemical industry, a livestock industry behavioral change to a proactive posture would represent a significant response to the legitimacy liabilities facing the industry. Moving from a reactive to a proactive posture in dealing with the industry legitimacy weaknesses would mean the first step in reacquiring a stable business environment for the development of the livestock industry.

Third, specifically within the context of the public informational meetings, the strong emphasis placed by the consultants on the technical aspects of technology and management is not the best strategy to support the legitimacy of the proposed facility. Elsbach (1994) results on the California cattle industry indicated that references to institutional characteristics were more effective than references to technical characteristics in protecting the legitimacy of organizations following controversial events. Consultants would be more effective in communicating the facility proposal
legitimacy if increasing the emphasis on institutional characteristics. References to institutional aspects of the industry would include, for example, prioritizing the concerns stated by a relevant stakeholder, as it is the case of the local community. It could also mean making reference to effective legitimacy agencies, even though having a legitimacy agent of importance to the local community is still a challenge to be pursued by the Illinois livestock industry.
CONCLUSION

The strategic legitimacy assessment method represents a major advancement to the organizational legitimacy research field. Departing from the premise that legitimacy matters within the business environment, as supported prolifically by the empirical legitimacy literature, the legitimacy assessment method offers a tool for managers and industry professionals to evaluate and to respond, in real time, to the legitimacy liabilities faced by industries.

Three core elements are the basis for the strategic legitimacy assessment method: the stakeholder figure, the legitimacy themes and the legitimacy bases. Combined, one can assess who are the relevant stakeholders, what are the issues being questioned and on what bases such questioning occurs. Relevant stakeholders are the groups identified by managers in a position to impose constraints to the growth and to the development of an industry.

Results indicate the Illinois livestock industry has severe legitimacy liabilities. The local community, a crucial stakeholder, challenges the legitimacy of the industry on multiple themes. The legitimacy themes, which are the subjects and the issues disputed by the local community, are based either on pragmatic or normative legitimacy. Health, odor, economics, location and recreation, legitimacy themes based on pragmatic legitimacy, indicate to the industry the importance of the community self-interested evaluations. Regulatory adequacy, community, information, environment and management, legitimacy themes based on normative legitimacy, constitute a diverse group. The
normative legitimacy themes questioned by the local community are associated to several stakeholders and indicates the many elements involved in the process of granting or withholding industrial legitimacy.

The industry reaction to the legitimacy challenges posed by local communities, revealed in the legitimating strategy adopted by the consultants conducting the siting of new livestock facilities, is ineffective. The consultants legitimating strategy emphasizes regulative legitimacy and focus on the operation of the facility. While supporting the proposal legitimacy on a regulative basis is sufficient for the government stakeholder, that is not the case for the local community. The local community considers inadequate the prevailing regulatory standards and questions the legitimacy of the facility on a pragmatic and on a normative basis. As for the focus on the operation, the legitimacy challenges on pragmatic themes (odor and economics, for example) reveal the local community disbelief in the ability of management and technology to control the negative externalities associated to modern livestock production.

In addition to the legitimacy results on the Illinois livestock industry, the inductive stages of the assessment method presented an important new element to the dispute of legitimacy: the legitimacy agent. Previous research had demonstrated the significant implications of the legitimacy agent on different organizational performance measures (for example: Cohen and Dean, 2005; Eesley and Lenox, 2006), but mostly lacked on differentiating the legitimacy agent from the legitimacy theme. The legitimacy agent, a position or an entity, represents and communicates legitimacy themes. In the case of the
public informational meetings, the consultants employed extensively the Illinois Department of Agriculture as the legitimacy agent, despite the local community negative assessment of the standing regulations.

A limitation of the strategic legitimacy assessment method refers to the measurement of the legitimacy themes identified. While it is possible to identify the frequencies of the legitimacy themes stated by the local community and to take the frequencies as an indication of relevance, the legitimacy assessment does not offer measures on the costs of the initiatives needed to ease the local community opposition on the themes being challenged. Another limitation, this being specific to the present assessment conducted on the Illinois livestock industry, refers to the inductive identification of the legitimacy themes. The identification was elaborated by one coder, when ideally two coders would work together and intercoder reliability rates would be assessed to reinforce the robustness of the results.

The application of the strategic legitimacy assessment method to other contexts and industries would provide greater insight into the dynamics of legitimacy. Future research could explore the dependence relation among stakeholders, legitimacy themes and legitimacy bases. Also on future research, a systematic approach for data collection needs to be adopted or developed. In the present study the data was obtained directly from the public informational meetings transcripts. However, such venues for relevant stakeholders to state their perceptions will not be necessarily present within other contexts.
REFERENCES


Goldsmith, P. D. and D. Saripally 2007 The Economic Impact of Illinois’s Livestock Industry. The Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Chamapign.


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Person A4a 2003 Transcript public informational meeting farm A. p. 13, line number 280.
Person A4b 2003 Transcript public informational meeting farm A. p. 11, line number 241.
Person A4c 2003 Transcript public informational meeting farm A. p. 15, line number 322.
Person A6a 2003 Transcript public informational meeting farm A. p. 27, line number 605.
Person A6b 2003 Transcript public informational meeting farm A. p. 23, line number 517.
Person B3 2003 Transcript public informational meeting farm B. p. 13, line number 278.
Person B6 2003 Transcript public informational meeting farm B. p. 57, line number 1278.
Person C3a 2005 Transcript public informational meeting farm C. p. 21, line number 470.
Person C3b 2005 Transcript public informational meeting farm C. p. 35, line number 784.
Person C3c 2005 Transcript public informational meeting farm C. p. 22, line number 481.
Person C4 2005 Transcript public informational meeting farm C. p. 75, line number 1687.
Person C5 2005 Transcript public informational meeting farm C. p. 89, line number 1997.
Person C7 2005 Transcript public informational meeting farm C. p. 146, line number 3293.
Person C19 2005 Transcript public informational meeting farm C. p. 128, line number 2884.
Person C20 2005 Transcript public informational meeting farm C. p. 45, line number 1002.
Person C22 2005 Transcript public informational meeting farm C. p. 92, line number 2066.
Person C38 2005 Transcript public informational meeting farm C. p. 100, line number 2251.

Person C49 2005 Transcript public informational meeting farm C. p. 126, line number 2833.

Person C50 2005 Transcript public informational meeting farm C. p. 129, line number 2909.


APPENDIX A: EIGHT LMFA CRITERIA (VERBATIM), ILLINOIS DEPARTMENT OF AGRICULTURE

1. Whether registration and livestock waste management plan certification requirements, if required, are met by the notice of intent to construct.
2. Whether the design, location, or proposed operation will protect the environment by being consistent with this Act.
3. Whether the location minimizes any incompatibility with the surrounding area’s character by being located in any area zoned for agriculture where the county has zoning or where the county is not zoned, the setback requirements established by this Act are complied with.
4. Whether the facility is located within a 100-year floodplain or an otherwise environmentally sensitive area (defined as an area of karst area or with aquifer material within 5 feet of the bottom of the livestock waste handling facility) and whether construction standards set forth in the notice of intent to construct are consistent with the goal of protecting the safety of the area.
5. Whether the owner or operator has submitted plans for operation that minimize the likelihood of any environmental damage to the surrounding area from spills, runoff, and leaching.
6. Whether odor control plans are reasonable and incorporate reasonable or innovative odor reduction technologies given the current state of such technologies.
7. Whether traffic patterns minimize the effect on existing traffic flows.
8. Whether construction or modification of a new facility is consistent with existing community growth, tourism, recreation, or economic development or with specific projects involving community growth, tourism, recreation, or economic development that have been identified by government action for development or operation within one year through compliance with applicable zoning and setback requirements for populated areas established by this Act.
APPENDIX B: CODING AGREEMENT RATES

The text units identification agreement rate \( (t.u. \%) \) was calculated as:

\[
t.u.\% = \frac{t.u. \text{ both coders}}{t.u. \text{ both coders} + t.u. \text{ only coder 1} + t.u. \text{ only coder 2}}
\]

where \( t.u. \text{ both coders} \) = legitimacy statements identified by both coders, including the ones where the legitimacy type coding differed

\( t.u. \text{ only coder 1} \) = legitimacy statements identified solely by coder 1

\( t.u. \text{ only coder 2} \) = legitimacy statements identified solely by coder 2

The legitimacy basis coding agreement rate - or intercoder reliability (Miles and Huberman, 1994) – was calculated as:

\[
l.b.\% = \frac{\text{number of l.b. agreements}}{\text{number of l.b. agreements} + \text{number of l.b. disagreements}}
\]

where \( \text{number of l.t. agreements} \) = number of legitimacy statements where the coders agreed with respect to the legitimacy form coding

\( \text{number of l.t. agreements} \) = number of legitimacy statements where the coders agreed with respect to the legitimacy form coding

The legitimacy type coding agreement rate is calculated using only the text units that were identified at first by both coders. That is, if coder 1 identified text units \( a, b, \) and \( c \) and if coder 2 identified text units \( a, b, \) and \( d \), \( l.t.\% \) is calculated using only the text units \( a \) and \( b \).
APPENDIX C: TEXT UNITS STATISTICS AT THE FARM LEVEL

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