

2016

Who decides what and why: Deciphering Iowa county zoning policies, professionals and politicians

Hannah C. Dankbar
Iowa State University

Follow this and additional works at: <http://lib.dr.iastate.edu/etd>

 Part of the [Urban, Community and Regional Planning Commons](#)

Recommended Citation

Dankbar, Hannah C., "Who decides what and why: Deciphering Iowa county zoning policies, professionals and politicians" (2016). *Graduate Theses and Dissertations*. 15897.
<http://lib.dr.iastate.edu/etd/15897>

This Thesis is brought to you for free and open access by the Iowa State University Capstones, Theses and Dissertations at Iowa State University Digital Repository. It has been accepted for inclusion in Graduate Theses and Dissertations by an authorized administrator of Iowa State University Digital Repository. For more information, please contact digirep@iastate.edu.

Who decides what and why: Deciphering Iowa county zoning policies, professionals and politicians

by

Hannah Dankbar

A thesis submitted to the graduate faculty
in partial fulfillment of the requirements for the degrees of
MASTER OF COMMUNITY AND REGIONAL PLANNING
and
MASTER OF SCIENCE

Co-majors: Community and Regional Planning and Sustainable Agriculture

Program of Study Committee:
Gary Taylor, Major Professor
Francis Owusu
Mary Wiedenhoeft

Iowa State University

Ames, Iowa

2016

TABLE OF CONTENTS

	Page
LIST OF FIGURES	iii
LIST OF TABLES	iv
ACKNOWLEDGMENTS	v
ABSTRACT	vi
CHAPTER 1. INTRODUCTION	1
Background of Study	3
Purpose of Study	4
Significance of Study	5
Research Questions and Hypotheses	6
Summary and Thesis Outline	7
CHAPTER 2. NAVIGATING POLICY SPACE	9
Defining Policy Space	9
Professional Knowledge	11
Political Influence	15
Local Implementation History	18
Conclusion	21
CHAPTER 3. POLICY SPACE IN PRACTICE: THE AGRICULTURE EXEMPTION TO COUNTY ZONING	22
Policy Space Surrounding the Agriculture Exemption to County Zoning	24
History of the Agriculture Exemption to County Zoning	28
Summarized History of the Agriculture Exemption to County Zoning	43
Conclusion	46
CHAPTER 4. METHODS AND RESULTS	49
Methods	49
Results	54
Conclusion and Summary	71
CHAPTER 5. DISCUSSION AND CONCLUSION	73
Summary of findings	73
Results Within Policy Space Framework	75
Limitations	79
Implications and Recommendations	80
Future Research	81
Conclusion	82
BIBLIOGRAPHY	83
APPENDIX. COUNTY ZONING ADMINISTRATOR SURVEY CODEBOOK	90

LIST OF FIGURES

	Page
Figure 1-1. Iowa county zoning administrators determine how the exemption should be administered, but are subject to political influence and judicial review.....	3
Figure 2-1. Policy space framework utilized by Bruff and Wood, 2000, p. 605.....	10
Figure 3-1. Counties that utilize zoning in Iowa (Buffington, 2015).	23
Figure 3-2. Policy space surrounding the Agriculture Exemption to Iowa County Zoning. Adapted from Bruff and Wood, 2000.	25
Figure 4-1. Metropolitan, Micropolitan and Rural counties in Iowa.....	51
Figure 4-2. Histogram of total knowledge scores.....	58
Figure 4-3. Normal quantile plot of knowledge scores.....	58

LIST OF TABLES

	Page
Table 3-1. Summarized history of the Agriculture Exemption to County Zoning	43
Table 4-1. Research questions and hypotheses	49
Table 4-2. Number of time administrators have denied the exemption over the past three years.....	55
Table 4-3. Administrators perceptions on whether the applications for the exemption has increased in the past three years.....	55
Table 4-4. Indicators used to determine whether the exemption applies.....	56
Table 4-5: Counts of how administrators learned about the exemption.	57
Table 4-6. Total knowledge scores compared by geography.	59
Table 4-7. General knowledge scores compared by geography.	61
Table 4-8. Applied knowledge scores compared by geography.	62
Table 4-9. County zoning administrators describe their interaction with their county board of supervisors and the exemption.	64
Table 4-10. Themes describing how administrators interact with the county board of supervisors over the exemption.	65
Table 4-11. When making decisions about how to administer the exemption administrators rely on their interpretation of the exemption.	66
Table 4-12. Ordinal scale used to measure political influence.	67
Table 4-13. Ordinal levels of political influence.	70
Table 4-14. Themes describing how administrators interact with the county board of supervisors over the exemption.	70

ACKNOWLEDGMENTS

I am extremely grateful to my friends, family and committee for their support throughout my research and graduate school experience. I am thankful for my friends in the GPSA program who have challenged me to critically consider my surroundings. I have learned just as much from this group of people as I have from my coursework. I am inspired by their leadership and dedication to addressing food security in Story County through our partnership at Food at First to manage a donation garden and cook monthly meals. Sharing this time with this group of people has been one of my favorite parts of graduate school. I appreciate all of ways in which my family has supported me throughout this process. Lastly, I would like to thank my committee members, Francis Owusu, Mary Wiedenhoft, and my advisor Gary Taylor who provided encouraging words and helpful advice throughout this process.

ABSTRACT

Administrators find themselves in a policy space when they have to balance their professional knowledge of an ambiguous policy with political influence and local implementation history. The Iowa Agricultural Exemption to County Zoning provides an example of administrators making decisions in such a space. This policy exempts from county zoning regulation “land, farm houses, farm barns, farm outbuildings, or other buildings or structures which are primarily adapted by reason of nature and area, for use for agricultural purposes, while so used” (Iowa Code, Chapter 335). Limited guidance from state courts and state legislature leave county zoning administrators in a position of having to muddle through a policy space. In addition to their knowledge of the exemption, this policy space also provides county zoning board of supervisors, citizens and other actors the opportunity to either implicitly or explicitly influence how decisions regarding the exemption are made. This study evaluated where administrators are in this policy space by sending a survey to county zoning administrators across the state to learn what factors influence their administration of this policy. Descriptive and inferential statistics, as well as qualitative analysis were used to analyze the data. Results show that administrators are generally knowledgeable about the policy and because of their role as experts, many administrators do not perceive high levels of political influence. However, administrators in urban counties were found to have a higher level of understanding of how to apply the exemption, but also are subject to higher levels of political influence. These findings are important because the knowledge of, and political influence on the interpretation of the agricultural exemption can potentially act as a barrier to local food systems in Iowa.

CHAPTER 1.

INTRODUCTION

Local government protects the health, safety and welfare of a community through technical procedures and management. Out of a need to make these processes more efficient and effective the field of policy analysis emerged. (Healey, 2012, p.225). Within this field, policy space is a theoretical model that is used to capture the complexity and moving factors in administrative decision making. The concept of policy space acknowledges the discretion of street-level bureaucrats and the factors that influence their decisions when implementing ambiguous policies. As administrators muddle through this space they have no single standard to measure “successful” policy implementation (Lindblom, 1959; Matland, 1995). This theoretical model allows practitioners to identify their own positionality opposed to trying to fit their experience to a rigid model. The concept of policy space appears in literature regarding international development, sustainable development, natural hazard policy analysis, and can apply to almost any discussion on policy implementation (Bruff and Wood, 2000; Deegan, 2006; Mayer, 2009). Although there is no concise definition of policy space, there is this general understanding of policy space as administrators having to balance multiple factors in deciding how to implement a particular policy. The Iowa Agriculture Exemption to County Zoning is an example of administrators operating within such a policy space.

Iowa Agriculture Exemption to County Zoning

Iowa Code exempts “land, farm houses, farm barns, farm outbuildings, or other buildings or structures which are primarily adapted by reason of nature and area, for use for agricultural

purposes, while so used” from county zoning regulation (Iowa Code §335.2). The Iowa Supreme Court has defined the word “agriculture” to mean “the art or science of cultivating the ground, including harvesting of crops and rearing and management of livestock.” (*Thompson v. Hancock County*, 1995). Over time, the courts have provided limited guidance on how to apply this zoning exemption.

The legislature’s intended application of the exemption is not well understood by Iowa county zoning administrators (Hamilton, 1981; Taylor, Vandelaar, and Lauer, 2011). Coupled with limited guidance from state courts, zoning administrators are left questioning how to correctly administer the exemption (Barnes, 2008; Hamilton, 1981). Figure 1-1 shows that administrators are on the frontlines of determining how the exemption applies, but that their decisions can be appealed. As farmers and producers look for creative ways to either expand or streamline their businesses, administrators are faced with new questions, and little guidance for how to answer those questions. Iowa Code leaves each county to decide whether a structure or practice conforms to its understanding of the exemption and this results in varying methods of decision making and enforcement and varied outcomes (Iowa Code §335.1). This confusion and inconsistency means that there is no uniformity in how the exemption is administered from county to county. This can lead to frustration for both administrators and producers.

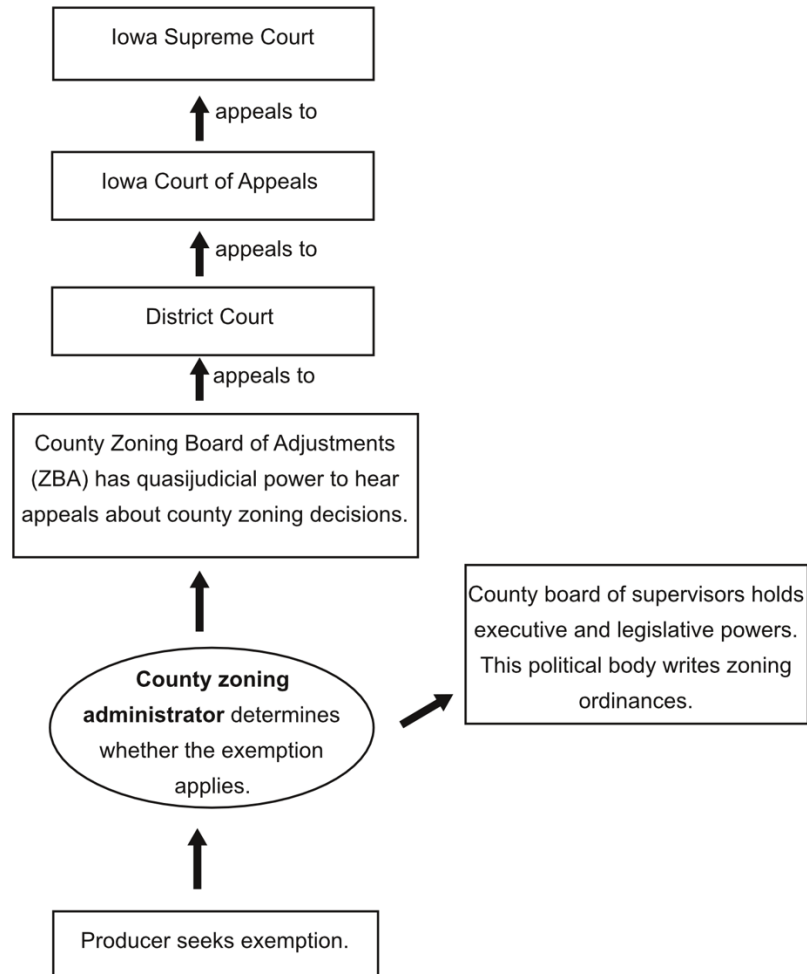


Figure 1-1. Iowa county zoning administrators determine how the exemption should be administered, but are subject to political influence and judicial review.

Background of Study

In 2010 and 2011, Iowa State University Extension and Outreach conducted three focus groups across the state of Iowa to identify barriers to local foods and policy options that local governments could utilize to promote local foods. The focus groups identified defining and administering the agricultural exemption as one of the top three challenges to developing and expanding local food systems in Iowa (Taylor, et al., 2011).

My interest in this project stemmed from the result of these focus groups and my work under a grant from the Leopold Center for Sustainable Agriculture. The focus of this project was to develop a guidebook, *Local Foods and County Zoning*, to provide county officials with an overview of legal issues associated with this exemption, develop a “decision tree” to help county zoning officials and local producers work through how the exemption should be applied, and to suggest local zoning practices that are consistent with the exemption and supportive of local food production and distribution. In discussions with county zoning administrators to gather scenarios for this guidebook, it became obvious that there are different understandings and criteria of what is considered “agricultural” in different counties; and I became interested in finding out how these professionals make decisions regarding the exemption.

In order to effectively engage county officials in discussion on how to apply the agricultural exemption, it is important to understand how decisions are currently being made and what administrators across the state know about the exemption. What an administrator considers as agriculture can either support or act as a barrier to local and community based food and agricultural systems. I am interested in learning how administrators understand agriculture and how they make decisions on how to regulate it, if at all.

Purpose of Study

Apart from the few court cases regarding the exemption, which will be addressed in Chapter 3 of this paper, I found no evidence documenting what Iowa county zoning administrators know about the exemption and how they make decisions apart from something other than explicit enforcement instructions from the policy itself. The purpose of this study is to explore the policy space that Iowa county zoning administrators muddle through to balance (1)

their knowledge of the exemption, (2) any implicit or explicit political influence they may encounter, and (3) the local implementation history to understand which factors have the largest influence on the administrators in their decisions of how to apply the exemption.

Significance of Study

This study will lay the ground for future efforts to work with county zoning administrators to promote a more uniform knowledge base and decision making process on how to administer the exemption. This study will provide an understanding of how decisions are currently being made so future efforts can identify how the existing decision making processes may act as a barrier to local foods and other types of agriculture. This study will demonstrate whether it is important to engage elected officials, such as county supervisors, in future trainings and discussions regarding the exemption.

This study is important to those in planning and agricultural fields. Zoning is a police power that planners utilize to protect the health, safety and welfare of a community (*Euclid v. Amber Realty Co.*, 1926). Many planners are not familiar with the diverse practices producers use in the production and distribution of their products, such as on-site processing and sales. In order for local foods to be successful in Iowa, county zoning administrators have to find a balance between their police powers and the needs of producers. My goal is to help define where administrators are in this process by exploring who and where the knowledge of how to apply the exemption comes from. My hope is that this study is used by groups interested in protecting and promoting agricultural activity in the state to develop targeted educational programming that engages county zoning administrators, public officials and producers in discussion and education regarding how to best administer the exemption.

More broadly, this study also offers an example of how professional planners can find themselves in a policy space where they have to make decisions on how to apply an ambiguous policy. Planners are seen as professionals and are trusted by members of the community, but sometimes they find themselves in an open space with little guidance on how to make professional decisions.

Research Questions and Hypotheses

The broad research question of this study is: how do Iowa county zoning administrators operate in the policy space that is created by the Iowa county zoning agriculture exemption? To answer this question, I ask two questions to evaluate where these administrators find themselves in this policy space:

- 1) How knowledgeable are Iowa county zoning administrators about the agriculture zoning exemption?
- 2) How do county zoning administrators balance their knowledge of the law with political influence in making their decisions of how to apply the agriculture zoning exemption?

Based on these research questions I generated three hypotheses. These hypotheses attempt to make sense of the ununiformed application and application of the exemption. My hypotheses are:

- 1) The knowledge of the agricultural exemption law is higher among zoning administrators in urban areas than in rural areas.
- 2) County zoning administrators with more knowledge of the law experience less political influence.

- 3) County zoning administrators experience political influence in a variety of ways; but experience more explicit political influence further from an urban area and more implicit influence closer to an urban area.

My research questions and hypotheses developed from a hypothesis that the level of knowledge and political influence varies between urban and rural counties. While industrial scale agriculture dominates the Iowa landscape (Mutel, 2008), local market producers prefer locations on the city fringe for easy access to markets. Local market production presents new questions about how the exemption should be administered (Taylor, et al., 2011). These new questions demand an understanding of the exemption to help insulate administrators from political influence.

Summary and Thesis Outline

This research takes a critical look at how Iowa county zoning administrators make decisions regarding the Iowa Agriculture Exemption to County Zoning. The following chapters will elaborate on the confusing nature of the exemption and how administrators make decisions of how to administer it.

Chapter 2 explores the concept of policy space. Ambiguous policy and bureaucratic discretion open a policy space where administrators have to balance their professional knowledge with political influence and local implementation history. This chapter introduces the theoretical framework of policy space that informed the methodology and analysis in this study.

Chapter 3 details how the exemption creates an ambiguous policy space for administrators to navigate by covering the history of the exemption since it was adopted in 1946 and the confusing nature of the policy and what information administrators have access to when making their decisions about how to administer the exemption.

Chapter 4 presents the survey methodology and results. A survey was sent to Iowa county zoning administrators. Descriptive and inferential statistics are used to analyze the data and compare responses across geographies.

Chapter 5 offers a discussion on how the survey results fit into the policy space. Final conclusions, limitations to the study, and opportunities for future research are also presented in this chapter.

CHAPTER 2.

NAVIGATING POLICY SPACE

Defining Policy Space

Bruff and Wood (2000, p. 594) studied policy space in the context of how sustainable development policies are interpreted in a development plan process. They defined policy space as, “[t]he way in which changes in the national political climate can provide opportunities for reinterpreting existing local policies or developing new policy approaches to recognised problems”. They concluded that this policy space was bound by: 1) limits of the planning system, 2) limits from the influence and interpretations of local politicians and 3) limits from the local planning history (Figure 2-1). This framework shows how planners interpret sustainable development in Unitary Development Plans (UDPs)¹. The dashed lines demonstrate an incomplete relationship with sustainable development. Other studies have identified similar variables that influence the discretion of administrators. For example, Meyers and Vorsanger (2003) identify four variables which impact administrative decision making: 1) political input, 2) institutional input, 3) knowledge of street-level bureaucrats, and 4) local contextual factors. Bruff and Wood (2000) use these factors in their study; 1) political input, as seen in Figure 2-1, places limits on how UDPs address sustainable development; 2) institutional input is captured by the local planning history; 3) knowledge of street-level bureaucrats is addressed in the planning system, planners utilize their knowledge to navigate this system; and 4) local contextual factors

¹ Unitary Development Plans are statutory documents used in the United Kingdom that sets out a local council’s policies for development, conservation and environmental improvement.

are interwoven into each boundary in Figure 2-1, Bruff and Wood write how each of these factors can be experienced differently in each community.

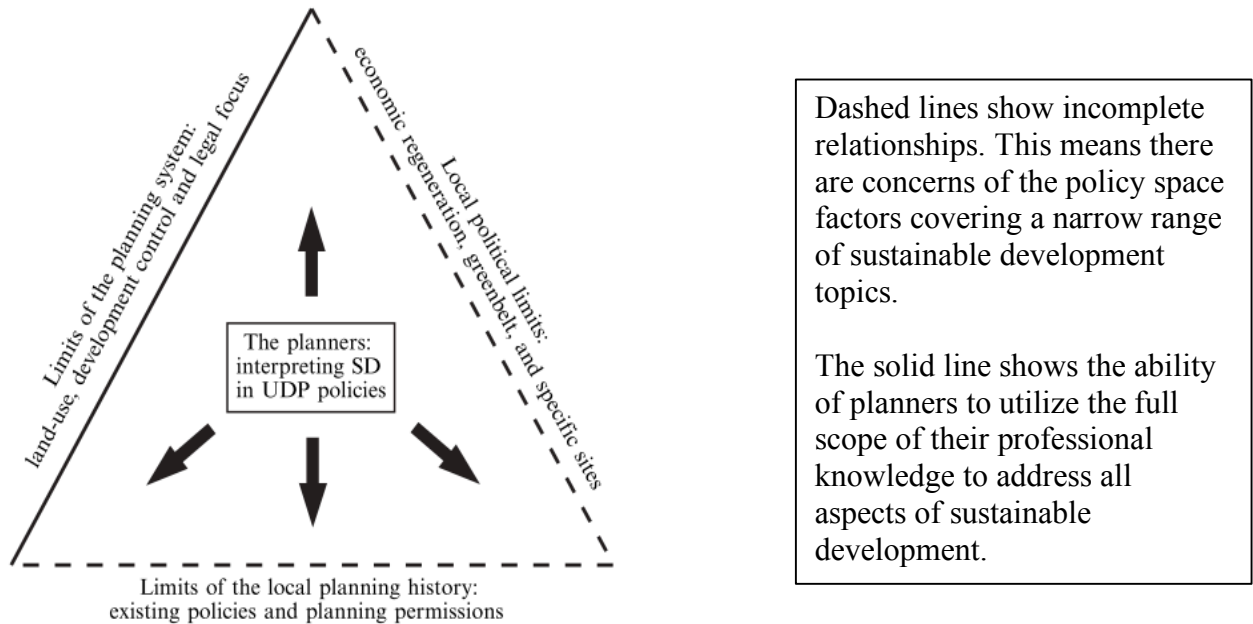


Figure 2-1. Policy space framework utilized by Bruff and Wood, 2000, p. 605.

According to Lipsky (1980), two factors that contribute to the creation of policy space are the high-level of discretion in bureaucratic decision making and ambiguous policy language. The high-level of discretion that street-level bureaucrats have when making decisions about how to administer a policy allows for other factors to influence decisions when there is uncertainty about how to administer the policy. However, it is important for street-level bureaucrats to have discretion in their jobs because they: 1) work on issues that can be too complicated to be captured in explicit instructions, 2) engage with the public and must be able to respond to individual human dimensions, and 3) have the primary goal of promoting the well-being of the public. For these reasons it is likely that street-level bureaucrats will always need a level of discretion with their jobs (Lipsky, 1980).

Ambiguous policy can lead to “bureaucratic policy making”, as termed by May, Jochim and Pump (2013, p. 111), which results from administrators making decisions in a policy space. This space is created when legislators defer policy implementation to experts within the government. Ambiguous policy combined with the discretion of street-level bureaucrats creates room for other influences to impact decisions. This leaves administrators in a policy space where they have to determine what influences to rely on in their decision making processes. Ambiguity is neither a good or bad characteristic of a policy, but rather a characteristic that should be embraced as a learning opportunity to create innovative approaches to implementation (Bruff and Wood, 2000; Matland, 1995). The level of ambiguity in a policy affects the implementation process by affecting the: ability of supervisors to monitor activities, likelihood that the policy is uniformly understood, and how local context plays a significant role in implementation (Matland, 1995).

Professional Knowledge

Professional knowledge is widely regarded as a primary explanatory variable in decision making of street-level bureaucrats (May and Winter, 2007). Knowledge contributes to policy space in two ways. First, administrators are experts in their field. This status is tied to their specialized knowledge in programs and policies that affect the daily lives of the people they serve. Second, policy ideas and knowledge travel and impact communities in different ways. This means that administrators may receive the same information regarding the policy from the legislative and judicial branches, but how those policy ideas are implemented and how administrators learn from each other can influence how the policy is implemented in different

ways in different communities. Interpretive policy analysis (IPA) is a theory that explains the messy nature of how policy ideas spread and explains this phenomenon.

Administrators as experts

Lipsky (1980, p. 3) defined street-level bureaucrats as “public service workers who interact directly with citizens in the course of their jobs, and who have substantial discretion in the execution of their work”. Planners and other government administrators are seen as experts and professionals in their field who translate policy into action to protect the health, safety and welfare of their community; one way this is done is through enforcing zoning regulations. Planners are seen as experts because of the type of knowledge that they possess through education and experience.

Inconsistencies in knowledge of a policy can lead to frustration and distrust of local officials because planners produce public policy as the public experiences it (Lipsky, 1980; Rydin, 2007; Torgerson, 1986). The public perceives planners to be some of the most competent officers within local government that are able to act independently of political involvement; allowing them to provide their knowledgeable input in the policy process (Blowers, 1980; Bruff & Wood, 2000). This trust is important because planners perceive themselves as “citizen agents”, responding to the needs of their community, not political interests. This can lead to policy deviating from the original goals in the implementation process (Lipsky, 1980; Maynard-Moody and Muscheno, 2000, p. 348). Expecting uniform implementation diminishes the ability of local planners to use their professional knowledge; however, ambiguous policy goals, no defined “correct” behavior, and different actors over time leads to implementation outcomes that are difficult to predict (Cohen, March and Olsen, 1972; March and Olsen, 1976, 1986).

The position of planners as experts who are independent of political activity is based on their having specialized knowledge. Knowledge is different from information and data in that information and data do not consider causal relationships. It is critical for planners who implement policy to understand the relationship between action and impact; precisely because their decisions impact everyday lives and local zoning decisions are subject to judicial review. (Norton, 2011; Rydin, 2007). Ambiguous policy empowers discretion in the decision-making process of street-level bureaucrats by allowing them to rely on their knowledge and their understanding how the policy can best apply to their community in order to make decisions that address local concerns. To maintain their expert status when they are given little to no instruction on how to administer a policy, administrators must look outside the policy for guidance.

Interpretive policy analysis

Interpretive policy analysis (IPA) captures the messy nature of how policy ideas spread. Planning professionals, in their role as policy experts, have to rely on their experiences and professional training to determine how to implement an ambiguous policy. These determinations can be difficult, and can be influenced by input and experiences from outside the policy language. Healey wrote that policy ideas, “[c]irculate around the messy world of political life, each with its complex intellectual culture and history, and its struggles between agencies and between institutions” (2013, p. 1517). Under IPA, the focus is on the construction and mobilization of ‘meaning’ that produce policy discourses formed by the policy language and practical aspects which are institutionalized into practices. The focus of these policy discourses is not on formal government institutions, but rather on the networks where the ideas formulate (Healey, 2013). Policy analysis from this perspective can capture a different explanation of

where policy ideas come from and how those ideas impact policy implementation. Although administrators are provided with the same policy ideas related to a policy from the government, other cultural networks that surround the administrators also contribute to their understanding of the policy.

Under this theory the role that local influences play in the local culture can impact the understanding that administrators have regarding a policy. If a specific industry or institution is present in a community and influences the culture of that community, then the community's understanding of the broader concept of the industry or institution will be defined by what surrounds them. For example, which animals and crops that are in a community can affect perceptions and understanding of agriculture. Planners also have professional networks that play a role in their understanding of policies. Compared to Actor-Network Theory, under the IPA framework there is more awareness that ideas do not have to be tied to a specific network or local influence, rather they can contribute to a 'climate of concepts' (Healey, 2013, p. 1518).

When making decisions of how to implement a policy administrators draw on their experiences to determine which knowledge is most useful in a situation (Colebatch, 2006). Determining which experiences to refer to can be a difficult judgment call and is a critical skill in policy work. According to Vickers (1965), judgment- not defining problems or solutions- is a critical skill in policy work. In the present case, administrators have their professional networks and local citizens to work with to gain a greater understanding of what is agriculture and how the exemption applies to it, but sometimes professional knowledge is not the only factor influencing decisions.

Political Influence

In theory, political activity should be restricted to the input side of government; meaning that implementation and enforcement activities should be independent of political activity. Literature demonstrates, however, that political activity can sometimes cause a gap between political intent and varied local outcomes (Stensöta, 2012). Healey argued, in the United States, “local administrations were much more open to the whims of local politics” compared to their European colleagues (2012, p. 225). One way that non-uniformed policy implementation happens is through greater involvement of elected officials in code enforcement. There are several studies that suggest local elected officials influence the decisions of street-level bureaucrats (May & Winter, 2007; Keiser, 1999; and Lewin, Lewin, Bäck, and Westin, 2008). This is partly because the desire to control land use is strong in local politics (Allensworth, 1980). Political influence on policy implementers is a type of disturbance that can lead to non-uniformed policy implementation; however, administrators may not always agree with or have the same interests as elected officials. This can lead to discrepancies in how an elected official believes a policy should be implemented and how it is actually implemented.

Healey (1990) described policy processes within planning as being inherently political, meaning that planners are involved in political activities even though they are perceived to be independent of these activities. The decisions made by planners often have to be approved by an elected body. This body can either join the public in acknowledging the planner as an expert, or they can question their decisions and politicize the planning process. This includes interpreting how zoning regulations apply to specific sites. When policies are ambiguous it is difficult for administrators to consistently enforce the code. The opportunity created by the ambiguous policy and the potential for political influence results in multiple protocols and interpretations of the

policy. The original meaning and goal of the policy can get lost and lead to inconsistent enforcement (Bruff and Wood, 2000).

Politics and power

Political activity impacts all human activities that relate to the general public or any section of the public (Allensworth, 1980). Easton defined politics as the “authoritative allocation of values” (1965, p. 50). Allensworth defined power as “actual translation of values into policy” (1980, p. 10). These two definitions show that without power there would be no action in local political systems. There is a strong interest in local politics to control land use; deciding how land use decisions are made can affect how power is distributed within a community (Allensworth, 1980). Power and political influence within local planning processes are largely confined to a small group of politicians and officials (Blowers, 1980; Kitchen, 1997). This power is balanced between professional administrators and the local elected officials they interact with.

Street-level bureaucrats have a high level of discretion when they interact with their clients; their power in the implementation process comes from their professional training and knowledge, compared to elected officials whose power comes from a sovereign citizenry. According to democratic theory, the intent and decisions of the elected policy writers are superior to street-level administrators, but the decision-making processes of these administrators should be respected because these processes can create learning opportunities that lead to innovative policy solutions (Matland, 1995). Although administrators have a high level of discretion when making decisions about how to implement a policy, they must keep in mind the original intent of the policy writers. Elected officials can either explicitly or implicitly influence how administrators make decisions.

Types of political influence

May and Burby (1998) found that there is greater pressure to be accommodating when elected officials are more involved in code enforcement. When this happens administrators can experience either explicit or implicit political influence. Explicit political influence can be experienced by politicians making clear comments directly to administrators about how to administer a specific policy. Although planning is considered “different and distinct” from functions of an elected body, the decisions made by administrators can be subject to political scrutiny explicitly when members of the public appeal a decision according to a prescribed procedure (Allensworth, 1980, p. 17).

Implicit political influence is experienced in subtler ways. It is possible for personal interests to be represented in local political structures by elected officials being involved in industries or institutions with specific interests. Davidoff (1965) argued that because planners are human, it is impossible for them to be completely value-free, and that these values divide people. The same can be said for politicians. These interests, involvements, and values can impact how decisions are made.

Not all actions by administrators are acknowledged by elected officials, but the actions that are acknowledged alert administrators that their actions are important (May and Winter, 2007). May and Winter studied this phenomenon in 2007 by using an empirical evaluation of the actions of municipal caseworkers implementing a national employment policy in Denmark. They found a variation in the way that street-level bureaucrats implemented policy from a higher-level. They had three conclusions:

- 1) Policy emphases of caseworkers were influenced by their professional understanding of policy goals, their professional knowledge, and policy evaluations. This finding was consistent with other research on this topic.
- 2) Higher-level political influences affected the actions of the caseworkers implementing the national policy and caseworkers were more willing to diverge from national goals when supported by their immediate political supervisors.
- 3) Policy, political and managerial influences were weak, but they cited a finding by Winter from 2003 that found that these influences may be stronger in more visible actions, such as the use of sanctions or the placement in specific employment-enhancing programs (May and Winter, 2007, p. 469).

Allensworth captured the power that politicians can have in administrative decision making when he wrote, “[p]ower behind the scenes of local planning decisions is still power” (1980, p. 16). Decisions would be made without bias in a perfect political system; however, personal interests do influence how individuals approach and make decisions.

Local Implementation History

Policy implementation happens where the local setting and the policy intersect. The localization factor is a key reason why there is no single theoretical structure for policy implementation, and partly explains why policies are written ambiguously (Maynard-Moody, Musheno, and Palumbo, 1990). When making decisions of how to administer a policy administrators utilize local ordinances and protocols. Local implementation history contributes to this policy space in two ways: 1) local knowledge impacts how a concept is understood and 2) previous decisions regarding a policy set precedent for future decisions. These two factors

provide administrators with background and evidence on which to base their decisions. If either or both of these factors leads the administrator awry, then a policy may be applied incorrectly.

Local knowledge

Corburn (2003, p.420) defines local knowledge as knowledge gained through firsthand experiences. Planners are in a unique position where they must balance scientific knowledge with local knowledge gleaned from the community. These experiences and other street-level factors contribute to policy understanding, political knowledge, attitudes, values and are important influences on behavior (Meyers and Vorsanger, 2003). Local knowledge is different from professional knowledge that is gained through professional education. Corburn lists four ways which local knowledge contributes to the planning process: (1) epistemology: adding to the knowledge base; (2) procedural democracy: including all voices; (3) effectiveness: providing low-cost solutions; and (4) distributive justice: highlighting inequitable distributions of burdens (2003, p. 427-430). Ambiguous policy and the resulting policy space allows local knowledge to be incorporated into the decision making process.

Local knowledge can be used to reinforce a community's paradigm. Meadows defined a paradigm as the "deepest set of beliefs about how the world works. These beliefs are unstated because it is unnecessary to state them- everyone already knows them." (2008, p. 162-163) How individuals and communities as a whole, conceptualize their world define how people operate within larger systems and can be the most difficult part of a system to change (Meadows, 2008, p. 163). How planners understand a concept and how they experience that concept may have a large impact on how policies are administered.

Setting precedent

Precedent acts as a reinforcing feedback loop in policy administrative systems. When a planner makes a decision on how to administer a policy and their decision is not overturned, that is positive reinforcement for their actions. As this positive feedback is built up over time these experiences act as a reinforcing feedback loop which reinforce the understanding the planner has about a policy (Meadows, 2008). Past actions can often predict future actions; if a planner experiences positive feedback for how they administered an ambiguous policy, it is unlikely that they will be motivated to reconsider their understanding and change their behavior. Once precedent in decisions and protocols is determined, it is difficult to change behavior; however, if the way in which the policy is administered diverges from the original intent of the policy then the stage is set for the policy to be incorrectly or unjustly administered in the future.

When policies are administered incorrectly or unjustly, the judicial branch of government can provide a remedy and acts as another reinforcing feedback loop. Precedent is also important in this setting. In the judicial branch of government, the doctrine of precedent is an essential doctrine in decision making. The Supreme Court of the United States wrote that this doctrine “promotes the evenhanded, predictable, and consistent development of legal principles, fosters reliance on judicial decisions, and contributes to the actual and perceived integrity of the judicial process” (*Payne v. Tennessee*, 1991, p. 7). An important factor to consider when evaluating how local implementation history impacts policy space is the compatibility of existing protocols and ordinances with the case law and legislative history.

Conclusion

The goal of this research is to understand which of these factors influence Iowa county zoning administrators when they use their professional discretion to administer the Agriculture Exemption to County Zoning. There is little guidance or instruction for how administrators should administer the exemption, which opens a space for political influence and local history to impact decisions. Because these factors can have varying levels of influence the results of this study contributes to the body of literature about policy space and policy implementation by providing an example of how decisions are made in this context and can be compared with other studies on this topic. The next chapter will demonstrate how policy space manifests itself in the case of the Agriculture Exemption to County Zoning.

CHAPTER 3.**POLICY SPACE IN PRACTICE: THE AGRICULTURE EXEMPTION TO COUNTY ZONING**

The Agriculture Exemption to County Zoning was first adopted in 1946. The state courts and legislature have not provided explicit criteria to determine whether a building or activity is primarily for agricultural purposes. It is the responsibility of the individual seeking the exemption to provide enough information to county zoning officials for the exemption to apply. This differs from other zoning regulations where administrators have criteria they can rely on to determine whether the exemption applies. Indicators of what is considered agricultural have ranged from primary means of livelihood, to number of acres, to accessory industrial or commercial uses, and now to assessing the primary use for the activity or structure (Hamilton, 1981; Taylor, et al., 2011).

The history of the agriculture exemption shows that different tests and different criteria have been in place throughout the history of the exemption. Industrial and small-scale agricultural practices have raised questions about how to apply the exemption. The courts have provided limited interpretation of how the exemption applies to industrial agricultural practices. For small-scale producers, questions regarding agritourism, on-site sales and processing, and other practices have raised new questions about how the exemption should be applied (Taylor, et al., 2011).

County zoning in Iowa

Chapter 335 of the Iowa Code does not require counties to adopt zoning. The map (Figure 3-1) below shows which of the 75 of Iowa's 99 counties that are fully zoned.

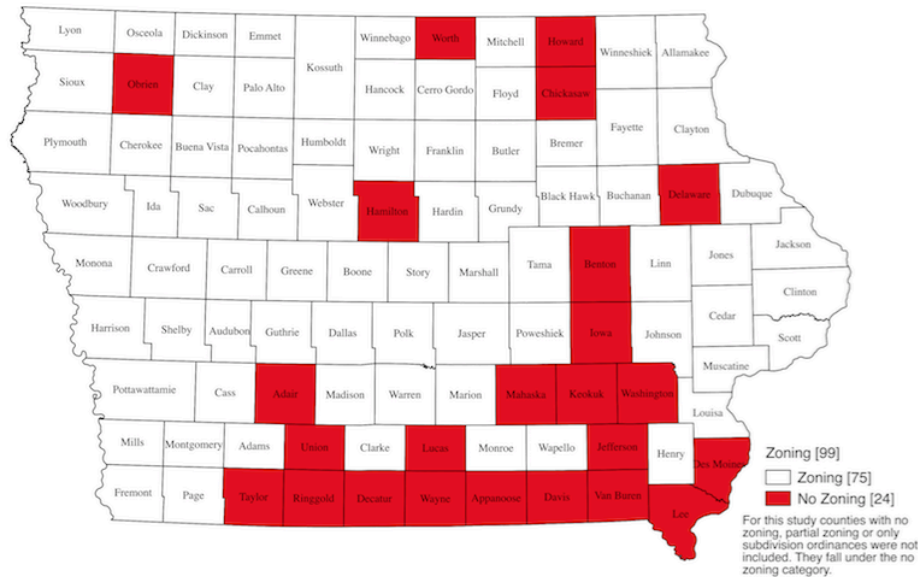


Figure 3-1. Counties that utilize zoning in Iowa (Buffington, 2015).

Iowa Code Chapter 335 grants county zoning powers to county officials, when it passed there were concerns about potential threats to agriculture and rural interests. The potential for development to happen right next to existing farms and then challenge their existence was considered as a threat to agriculture, especially during a time when industrial agriculture was developing in Iowa and farm sizes were increasing (Hamilton, 1998). Based on the broad language of the exemption, Hamilton (1981) believes the exemption was a political trade-off before county zoning was enacted in the state. The following section presents a chronological review of how the exemption has been addressed by the state legislature, Attorney General, and state courts.

Policy Space Surrounding the Agriculture Exemption to County Zoning

For this study ‘policy space’ is defined as the space where administrators balance their professional knowledge of the policy with political influence and local implementation history while administering the ambiguous policy. I adopted a similar framework to Bruff and Wood’s (2000) study to describe the policy space where Iowa county zoning administrators find themselves as they make decisions of how to apply the exemption. My framework can be seen in Figure 3-2 below. Instead of identifying the boundaries as limits, I think the boundaries of this policy space as the factors that Iowa county zoning administrators have to balance in order to apply the exemption. The Iowa Agriculture Exemption to County Zoning creates a similar policy space to sustainable development in the way that administrators are provided an ambiguous policy to administer and the way that agriculture has evolved since the adoption of the statute in 1946 has created opportunities for reinterpreting the policy and developing new approaches to apply the exemption.

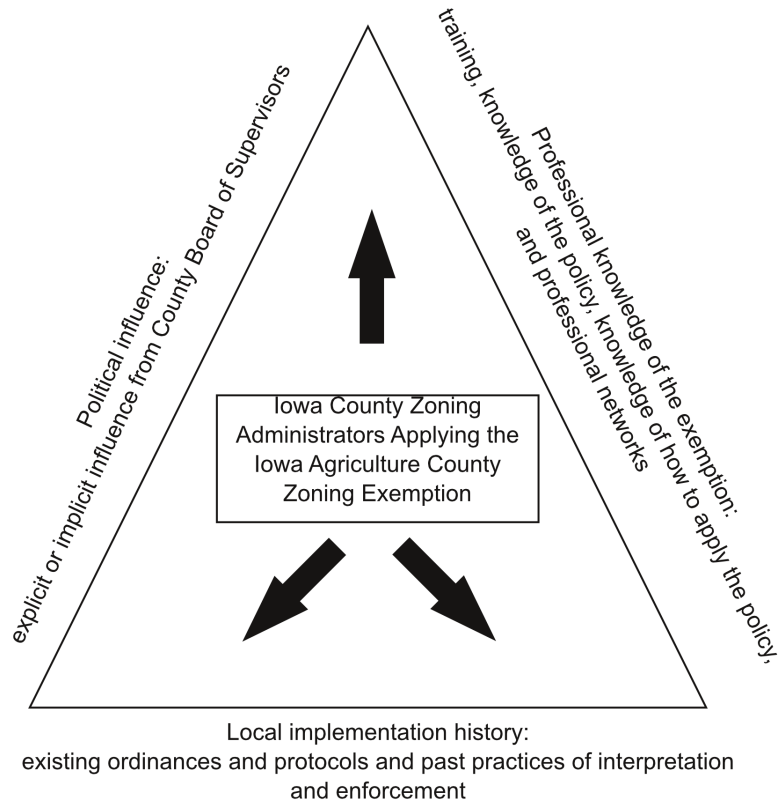


Figure 3-2. Policy space surrounding the Agriculture Exemption to Iowa County Zoning. Adapted from Bruff and Wood, 2000.

In this context, the policy space is created by the ambiguous language of the policy itself and the evolution of agriculture since the statute was adopted. As agriculture has evolved over time administrators have been required to evaluate what agriculture is and how the exemption should apply to respect the producer, while upholding the health, safety and welfare of all constituents. Although the Iowa Supreme Court has provided a definition of agriculture, this policy space creates an opportunity for county governments to approach the zoning policy differently by allowing zoning administrators and elected officials the opportunity to disagree over local interpretations of practices that are considered agricultural. County zoning administrators are left in a position of having to wander through a policy space where they have to make decisions of how to apply the exemption based on their knowledge of the statute. The

lack of implementation instructions from the statute, provide county zoning board of supervisors, citizens and other actors the opportunity to either implicitly or explicitly influence how decisions regarding the exemption are made.

Knowledge

Varying levels of knowledge of the Agriculture Exemption to County Zoning can result in a statewide lack of uniformity of policy implementation. Some county zoning administrators, for varying reasons, lack an understanding of the policy itself (Hamilton, 1981; Taylor, et al., 2011). What is known about the law comes from court cases and the language of the law. This presents challenges to applying the policy to new and different situations, such as value-added agricultural practices or new industrial agricultural practices. This lack of knowledge also leaves administrators susceptible to local influence.

Political influence

The county board of supervisors can explicitly influence how decisions about the exemption are made when they use their legislative power to create county zoning ordinances that specify how the implementation of the exemption should be operationalized. County zoning administrators are also susceptible to implicit political influence. This can take place through casual conversations outside of formal work situations that inform the administrator how politicians would like to see the exemption administered. This can be more difficult to measure because the administrator may not consider it political influence or may not take the comments seriously.

Local implementation history

Local factors can have an impact on the framework Iowa county zoning administrators operate under to make decisions of how to apply the exemption by creating the evidence and rationale that administrators use to explain and justify their decisions to producers and other interested parties. The decisions made by the County Zoning Board of Adjustment contributes to the local history by interpreting how the exemption is administered when conflicts arise. Local implementation history can narrow the perception of what qualifies to be exempt. Because these local factors are important to administrative decision making, it is important to consider them when evaluating the policy space surrounding the exemption. I consider institutional input and local contextual factors to be closely related and combined them into one factor, because how the local institution perceives and interprets agriculture is shaped by local cultural and economic context and impacts the institution's protocol.

Outside of the definition of agriculture provided by the Iowa Supreme Court, individual perceptions of agriculture can provide meaning to this definition. Beginning after World War II, around the time the exemption was adopted, industrial agriculture expanded in Iowa. Corn and soybean producers began operating larger farms and the use of mechanical and chemical aids became widespread. Over time, this industrial agriculture paradigm replaced smaller family operated farms and is still dominant across the state today (Mutel, 2008). Among the large, more industrial agriculture fields, there are some smaller, local-market producers in Iowa. These producers can supply a number of products to a community including: eggs, meat, honey, fruits, vegetables and value-added products such as wine, baked goods, or others. The types of producers present in a county can have an impact on how an administrator perceives agriculture

and influence how administrators are willing to accommodate different methods of agriculture into existing protocols regarding the exemption.

As protocols are developed and different scenarios under the exemption arise, the meaning of the exemption is drawn out. Some counties have ordinances that define agriculture and assign areas where agricultural activities can take place. Administrators have the task of respecting these ordinances and zones, but as case law has developed over time, it is important that local protocols and ordinances adapt to be compatible with the legal constraints set forth by the state. Not adapting to recent judicial rulings limits farming opportunities, and by extension makes agriculture land susceptible to being converted to other uses (Hamilton, 1981).

History of the Agriculture Exemption to County Zoning

Early history

State legislature adopts the exemption

The original version of the agriculture exemption was entitled “Farm exempt” and was adopted under Iowa Code §358A.2 in 1946. The relevant part read,

[n]o regulation or ordinance adopted under the provisions of this chapter shall be construed to apply to land, farm houses, farm outbuildings or other buildings, structures, or erections which are adapted, by reason of nature and area, for use for agricultural purposes as a primary means of livelihood, while so used; provided, however, that such regulations or ordinances which relate to any structure, building, dam, obstruction, deposit or exaction in or on the flood plains of any river or stream shall apply hereto. (Iowa Code §358A.2, 1946).

Attorney General opinion on minimum acreage requirement

In a 1953, Polk County requested guidance from the Iowa Attorney General on whether a farm needed a minimum number of acres to qualify for the agriculture exemption. The Attorney General determined that “whether such land is entitled to be exempted depends upon its use primarily as a means of livelihood and not the area of land that might constitute a farm.” (No

Docket Number, Iowa A.G., section *2 para. 3, 1953) Ten years later the state legislature took this determining factor out of the statute, leaving administrators with the same questions.

State legislature revisits the exemption

In 1963, the state legislature took out the phrase “as a primary means of livelihood”. The statute read:

[n]o regulation or ordinance adopted under the provisions of this chapter shall be construed to apply to land, farm houses, farm outbuildings or other buildings, structures, or erections which are adapted, by reason of nature and area, for use for agricultural purposes ~~as a primary means of livelihood~~, while so used; provided, however, that such regulations or ordinances which relate to any structure, building, dam, obstruction, deposit or exaction in or on the flood plains of any river or stream shall apply hereto. (Iowa Code §358A.2, 1963, strikethrough added).

Taking out the “primary livelihood” qualifier seemingly broadened the exemption (Hamilton, 1981, p. 565).

Attorney General opinion on characteristics of feedlots

In 1967, the Attorney General addressed a question from Hardin County. The County requested guidance in determining whether two commercial feedlots could be considered exempt under the agricultural exemption; Hardin County’s zoning ordinance required commercial feedlots to obtain a conditional use permit (CUP). One feedlot was in a rural district and maintained on a gravel pit; no other agricultural activities were taking place on the property. The second lot was in a conservation district, the farmer used crops grown on the property to feed the cattle.

At this time, the test of primary livelihood was no longer in the state code. The Attorney General struggled to define agriculture and determined that the question to ask was “whether the activity in the particular case is carried on as part of the agricultural function or is separately organized as an independent productive activity” (section *4, para. 5). The Attorney General decided that the gravel pit feedlot was subject to county regulation, but the land with crops and a feedlot was not. The Attorney General determined that the gravel pit was not operated on as part of an agricultural function under the primarily adapted test.

This ruling is important because the Attorney General noted that agriculture is a more comprehensive term than farming and that commercial feedlots are agricultural in nature as long as they are operated on agricultural land. The Attorney General evaluated the physical nature of the land alongside the use of the land in this decision, which was a step away from the primary question they raised in the opinion (67-12-7 Op. Iowa A.G., 1967). Deciding one feedlot was agricultural while the other one was not associated agricultural activities is a distinction that many producers and administrators would not be likely to know how to make, especially when there is no clear definition of agriculture.

Iowa Supreme Court questions commercial agriculture

The Iowa Supreme Court addressed the exemption for the first time in the 1971 in *Farmegg Products Inc vs. Humboldt County*. Farmegg Products Inc. proposed to build two 40x400 foot structures on four acres to house chickens. Due to the size of the structures and tract of land, the required set-back as defined in Humboldt County’s ordinance was not feasible. The question in this case was whether Farmegg had to comply with 200-foot setback from all

boundary lines for any structure housing animals or fowl, or whether the company's proposed use and structures were exempt from zoning regulations.

The Iowa Supreme Court determined the proposed buildings were commercial, not agricultural; and an independent production activity not associated with raising crops. The Court agreed with the Attorney General that "agricultural purpose" is broader than "farming" and encompasses the raising of animals, either together with or separate from crop raising. In this case, however, their decision rested on a test of whether the activity serves an agricultural purpose, or conversely is organized as a productive activity separate from agricultural goals (*Farmegg v Humboldt County*, 1971). This created a commercial vs agricultural standard that would be overturned later. Because agriculture is commercial in Iowa, this dichotomy did not clarify the definition of the exemption for producers or administrators.

Iowa Supreme Court questions a grain storage facility

The next case came in 1988, when the Helmkes questioned the legality of a decision made by the City of Ruthven Zoning Board of Adjustment regarding the exemption from county zoning of a grain storage facility operated by Farmers Cooperative Elevator Company. The grain storage facility was located within two miles of the city; meaning that it was in the county's jurisdiction, but also fell within the city's extraterritorial zoning area². Under Iowa Code, cities are allowed to enforce city zoning regulations in this extraterritorial area, but the agriculture exemption still applies in these areas (Iowa Code §414.23, 1981).

² Iowa Code §414.23 (1981) allows city zoning regulations to "be extended by ordinance by any city to the unincorporated area up to two miles beyond the limit of such city, except for those areas within a county where a county zoning ordinance exists." This is referred to as extraterritorial zoning.

The Court found that, although the Co-op did not plant, cultivate, or harvest the crops in the facility, the storage played a critical role in agriculture activities and determined that the exemption applied. They justified this by saying that the facility was built for farmers who could not store the grain in their own on-farm facilities, and so this off-farm facility was part of the harvest to market agricultural process. The Court found that any other interpretation would create too narrow a definition of agriculture. The Court asserted that this case “clarified” the test created in *Farmegg*. The Court admitted that determining where agriculture stops and commercial activity begins is not easy. The accepted test asked whether a particular activity is carried on as a part of the agricultural function or is separately organized as an independent productive activity (*Helmke vs. BOA Ruthven*, 1988). Due to the dominant agricultural paradigm in Iowa, this test still does not draw a clear distinction between agricultural and commercial uses. This case provides a clarification to determine whether an activity is agricultural by the necessity of the activity for agriculture or by the physical similarity of the activity compared to private farm activities.

Iowa Supreme Court addresses hog finishing buildings and waste facilities

In 1993, the Iowa Supreme Court answered a question related to hog finishing buildings in *DeCoster v. Franklin County*. DeCoster proposed to build five hog finishing buildings and cultivate the remaining land. DeCoster wanted to construct a waste storage basin under the buildings and dispose of the waste according to Iowa Department of Natural Resources (IA DNR) rules. In trial court, the buildings were determined to be exempt, but the waste basin was classified as a “private sewage treatment system” that could be regulated by the county; the Iowa Supreme Court questioned this finding on appeal.

The Court relied on the test created in *Farmegg* and applied in *Helmke* which asked whether a particular activity falls under the exemption depends on whether the activity is carried on as part of the agricultural function or is a separately organized and independent productive activity. Because the waste basin served only the building that housed the hogs, the court determined that it served an agricultural purpose (*DeCoster vs. Franklin County*, 1993). This case continued to evade providing a clear definition of agriculture. After multiple cases applying the same test, the distinction between agriculture and industrial activities remained unclear for administrators and producers.

Iowa Supreme Court defines agriculture

It was not until 1995, that the courts attempted to define agriculture. Hancock County sought review of a judgment from a lower court that determined a proposed hog confinement was exempt from county zoning under the agriculture exemption. The Thompsons proposed to build five hog confinement facilities to produce 4,180 to 5,000 hogs per year. The proposed facilities did not meet county zoning regulations.

The Court determined that the proposed hog confinement facilities were an extension of the Thompson's existing operation and were an agricultural function. The Court adopted a broad and generally accepted definition of agriculture as, "the art and science of cultivating the ground, including harvesting of crops and rearing and management of livestock." The Court determined that the confinement facilities were simply an example of "evolving agricultural functions" (*Thompson v. Hancock County*, 1995, section II para. 3). This is the first time the court offered a definition of agriculture. However, the Court did not clearly distinguish agriculture from commercial activities. Clearly articulating this distinction is necessary to clarify the exemption

for producers and administrators. The Court does not name specific activities or structures that are considered critical to conduct these activities.

State legislature revisits the exemption

The state legislature took another look at the exemption in 1995 and moved the exemption to Iowa Code Chapter 335.2. This is the most recent legislative update to the exemption. The current wording of the ordinance now reads:

Except to the extent required to implement section 335.27, no ordinance adopted under this chapter applies to land, farm houses, farm barns, farm outbuildings or other buildings or structures which are primarily adapted, by reason of nature and area, for use for agricultural purposes, while so used. However, the ordinances may apply to any structure, building, dam, obstruction, deposit or excavation in or on the flood plains of any river or stream. (Iowa Code §335.2, 1995, emphasis added).

The legislature added the word “primarily” to “primarily adapted, by reason of nature and area, for use for agricultural purposes, while so used” (Iowa Code §335.2, 1995). While this current version of the statute does not provide any criteria for county zoning administrators to use in their decisions of how to apply the exemption, it does add a qualifier for administrators and producers to use when making decisions on how the exemption should be administered.

Iowa Supreme Court addresses further concerns about hog confinements

The Kuehls and Hollmans were involved in agriculture in Cass County since 1977. In 1996 their joint venture to build and operate a hog confinement operation to hold 2,000 hogs was questioned by the County. The proposed building would sit on five acres that had no other structures, but another facility was possible in the future. At the time of the appeal, it was not

clear how the manure would be disposed of. The County interpreted the exemption to include a requirement that the confinement facilities be in association with other traditional farming activities that exist independently of the proposed use.

District court determined that the agriculture exemption did not apply to the proposed facility because the facility was separate from the farming operation undertaken by the Kuehls and Hollmans at the time. On appeal, the Iowa Supreme Court determined that the proposed confinement operation is used for agricultural purposes because it is adapted for agricultural use (the rearing of livestock) by reason of the nature of the structures and is therefore exempt from county zoning. The Court disagreed with the county's interpretation because their interpretation would lead to an inquiry into not only the proposed use, but of the person and entities directing the use. This would arbitrarily lead to similar structures being treated differently based on ownership.

This case is important because the court explicitly states that the test from *Farmegg*, which asked whether an activity is carried on as part of the agricultural function or is separately organized as an independent productive activity, should be disapproved. The Court states that the decision in *Helmke* was a break from the view established in *Farmegg* and that an exempt agricultural use must be in conjunction with a traditional use (*Kuehl vs. Cass County*, 1996). This ruling also clarifies the exemption by explaining that prior agricultural history and ownership does not determine whether the exemption applies. However, relating proposed uses to current operations makes the exemption complicated for producers who want to expand their businesses and to new producers who have not established their practices.

Attorney General opinion regarding farm houses and farm buildings

In 1997 the Attorney General authored an opinion providing guidance regarding how the exemption applies to farm houses and farm buildings. The Attorney General followed its own 1953 opinion by reporting that counties may not use a minimum acreage test as the sole indicator of defining a farm for purposes of applying the exemption. The proper inquiry is whether the property is actually used for agricultural purposes, and in the cases of homes, whether the occupants are engaged in agriculture on the land where the home is purchased; specifically, that farm houses are the residence of a farmer. The Attorney General concluded that it may be permissible for a county to adopt ordinances that *presume* small tracts of land are not used primarily for agricultural purposes and allow landowners to challenge the presumption. (97-1-1(L) Op. Iowa A.G., 1997).

Iowa Supreme Court questions CAFOs

In 1998, the Iowa Supreme Court addressed Humboldt County's four ordinances imposing regulations on confined animal feeding operations (CAFOs). Humboldt County Livestock Producer members and the Goodells brought suits that were consolidated into one action on appeal.

The Court determined that the ordinances were not zoning regulations because they did not regulate land use by districts; meaning that the agriculture exemption did not apply in this case and that the ordinances were not invalid under the exemption. The Court determined that for a regulation to be considered an exercise of zoning power, the land must be regulated by districts. Any other regulation could be considered a land use regulation, but without the district

requirement anything could be considered zoning and the agriculture exemption would be much broader than the original legislative intent (*Goodell vs. Humboldt County*, 1998).

While this case does not give guidance on how the agriculture exemption applies to CAFOs, it does offer evidence as to what constitutes zoning. This distinction is helpful to producers and administrators to understand what types of regulations agriculture is exempt from, and how those regulations should be constructed.

Recent opinions

Attorney General addresses industrial v. agricultural activity

In the early 2000s the only input on the exemption came from a 2001 Attorney General Opinion providing guidance on the distinction between industrial and agricultural activities. This distinction is crucial for producers and administrators to understand. The opinion addressed a question regarding an egg-breaking operation and whether it should be considered an industrial or an agricultural activity. The operation would consist of 30 high rise cage layer buildings. The buildings would house up to 4 million chickens and produce 2.8 million eggs each day.

In this context, the opinion defined industry as the “process of manufacturing, refining and purifying and excludes any process that does not change the character of an agricultural commodity” (01-2-1 Op. Iowa A.G., p.1, 2001). This can be compared with the definition of agriculture found in *Thompson*, “the art and science of cultivating the ground, including harvesting of crops and rearing and management of livestock.” (1995, section II para. 3). This opinion concluded that the distinction between agricultural and industrial activities in any given situation is a question of fact for purposes of the agricultural exemption. This means that

producers and administrators have to work together to determine whether a use or structure serves an agricultural purpose.

As practitioners and administrators discuss the exemption, this opinion outlined four principles to be used in review: (1) zoning regulation are intended to “protect the general well-being of others by prohibiting uses that would be injurious to others.”; (2) Section 335.2 was intended to “protect the farmer and his investment in the land”; (3) Exemptions should not swallow rules i.e. 335.2 must be considered in conjunction with 335.3 (enables county zoning); and (4) Courts generally defer to administrative decisions classifying property as industrial or agricultural and review difficult cases under a standard of reasonableness (01-2-1 Op. Iowa A.G., section B.1 para. 3-6, 2001). Courts cannot substitute judgment for that of a Board of Adjustments (01-2-1 Op. Iowa A.G., 2001). These factors were developed to guide decisions about the exemption which the Attorney General advised cannot be made in abstract; a producer who turns a few gallons of milk into butter and sells on the side of the road must be treated differently than a corporation that turns thousands of gallons into butter and ships nationally. The burden to demonstrate that the exemption applies rests on producers who may or may not understand these distinctions.

Iowa Court of Appeals addresses wastewater

The next case came in 2010. Sioux Pharm, Inc. manufactured chondroitin sulfate and produced 15,000 to 18,000 gallons of industrial wastewater each day. Because Sioux Center did not accept the wastewater into its municipal treatment facility, in 2003 Sioux Pharm began construction of an earthen wastewater storage facility without prior approval from Sioux County or the Iowa Department of Natural Resources (IA DNR). The construction was on privately

owned land, with an agreement that the farmer would purchase the wastewater from Sioux Pharm to apply to nine sites according to IA DNR rates.

After Sioux Pharm met with the County Planning and Zoning Commission, the company applied for a permit for a “non-farm” use involving industrial wastewater. The company received a temporary permit with several conditions attached. When it was time to review the temporary permit, the County found that the company did not address the conditions and did not extend the permit. Sioux Pharm filed suit in district court claiming the wastewater fell under the agriculture exemption. The court ruled in favor of the County and the decision was appealed.

On appeal, the Court upheld the lower court’s decision that read:

The storage lagoon was built by Sioux Pharm, Inc., not the landowner. Sioux Pharm, Inc. is a manufacturer who is not involved in agriculture. Even though Sioux Pharm, Inc. calls its wastewater ‘fertilizer,’ it has never registered the wastewater as a fertilizer or soil conditioner with the Iowa Department of Agriculture and has not complied with regulations for the storage of liquid fertilizer. It has obtained a fertilizer license but is not in the business of storing or selling fertilizers or soil conditioners. It is not in the business of raising crops or livestock. Sioux Pharm, Inc., is a pharmaceutical manufacturer (*Kramer et al. and Sioux Pharm Inc. vs. Sioux County*, 2010, p.10).

Also, on appeal Sioux Pharm compared their situation to the facts presented in *DeCoster v. Franklin County*. The court found factual distinctions between the two cases. The primary difference was the use of the storage facility. In *DeCoster* the storage facility was constructed to store the by-product of the livestock raised in the confinement located on the farm property. The Sioux Pharm lagoon was constructed to store wastewater that was a by-product of off-site industrial manufacturing. Even though the wastewater was applied to agricultural land, that was not the primary purpose for the lagoon. This important fact makes distinguishing industrial activity from agriculture understandable to producers and administrators. Accordingly, the Sioux

Pharm storage lagoon did not fall under the agriculture exemption (*Kramer et al. and Sioux Pharm Inc. vs. Sioux County*, 2010).

Iowa Supreme Court address farm houses

A 2013 case consolidated two separate cases, both cases questioned houses built in the late 1990s in Linn County. In 1995, the Langs acquired a 48.9-acre parcel and over time used a farmstead split to subdivide the land and build new houses. The County reported that they allowed this under the agriculture exemption and that if no agricultural activities existed on the land it would be considered nonconforming. The Langs eventually sold off 3.7-acres to a third-party. The Langs wanted to build two additional houses on the remaining 43.3-acres. Under Linn County ordinance they could not have more than one place of dwelling on the property, so the Langs applied for an agricultural exemption. The County granted the exemption, but decided that the land would not be eligible for subdivision.

In 2002, the County discovered that the Langs occupied one of the houses, but were renting out the other house to tenants that were not engaged in agricultural activities. The County issued a zoning violation. The court ruled in favor of the County. A few years later, the Langs rented the house to tenants who were not engaged in agricultural activities. Meanwhile, the Langs subdivided the property to solve the two-house issue. The new 6.52-acre subdivision was cited for not meeting the minimum lot size of 35-acres. Lang applied for an agriculture exemption and provided a list of crops that were grown on-site, but was the permit was denied. The Langs did not provide any additional evidence of commercial agriculture production, but argued that the County applied a minimum acre test and that the only question that should be asked is whether they were engaged in an agricultural activity. On appeal, the Court did not read

the evidence such that a minimum acreage test was applied (*Lang v. Linn County Board of Adjustment*, 2013). The court referenced the 1997 Attorney General opinion that defined a farm house as a house where the occupants “are engaged in agriculture on the land where the house [is] located.” (97-1-1(L), Iowa A.G., section *5 para. 2, 1997).

Regarding the second house that was subdivided onto a 3.7-acre parcel; the Langs originally constructed the house with the intent that their son would live there after college to help with the farming operation. When this did not happen the Langs rented it out to other tenants. The court affirmed that under the statute, the key consideration was whether House 2 and the land are “*primarily* adapted, by reason of nature and area, for use for agricultural purposes.” (Iowa Code §335.2, 1995, emphasis added). The Court noted that the County considered, among other things, the amount of time devoted to the performance of the work duties and that the County was looking at whether the tenants were “*primarily engaged*” in agriculture, not whether their primary livelihood was being made from agricultural activities on the land. Because the facts provided a basis for the Zoning Board’s decision, the court refused to overturn the decision.

The difference in the agriculture exemption in 1963 and the current version are critical. Prior to 1963 the statute was concerned with land, farm houses and building “which are adapted, by reason of nature and area, for use for agricultural proposes as a primary means of livelihood, while so used.” Prior to 1963 the statute did not contain the word “*primarily*”, but did tie the exemption to agricultural purposes “as a primary means of livelihood” for the landowner. Because the appropriate tests have changed over time and the limited amount of guidance from the judicial system; understanding which test to use and how to define various activities can be difficult for administrators.

In the court's view, the addition of the word "primarily" allows county zoning authorities to consider "the relative size, value, and construction date of the house compared to the scope, value, and duration of the claimed agricultural activities," and deny the exemption when the agricultural activities "are basically a sideline designed to obtain an agricultural zoning exemption for the owners' residence." (*Lang v. Linn County Board of Adjustment*, 2013, p.16). Although there is no one test to determine whether the agricultural exemption applies, the landowner must be able to closely tie the activities of the person occupying the house to the agricultural production taking place on the property. County zoning administrators are allowed to look at a variety of indicators including number of acres and number of hours spent on agricultural activities on-site.

Iowa Court of Appeals addresses waste

The most recent case related to the exemption was also in 2013. Phoenix is a company that recycles construction and demolition waste. One of their products is land abatement material (LAM). The Iowa Department of Natural Resources (IA DNR) granted Phoenix a beneficial use designation (BUD) in 2006 to fill a ravine on landowner Patterson's agricultural property in Madison County to improve the site for cattle grazing. Madison County notified Phoenix that the project would meet the zoning definition of a dump and must apply for a conditional use permit (CUP). The IA DNR inspected the site several times during after receiving complaints that the LAM contained materials not permitted by the BUD and that it was not being mixed with fill dirt. The IA DNR notified Phoenix that they did not intend to renew the BUD after it expired because of the attention needed to monitor the project.

On appeal, the issue in this case was whether the BUD site was exempt from county zoning because the activity carried out on land used primarily for grazing cattle. The court affirmed the lower court’s decision that the land was primarily used for agricultural purposes before, during and after the use of the site as a fill for LAM. There was evidence that cattle grazed on the site periodically throughout the operation and that clover and grass grew on the site. The court determined that agriculture was the primary use for the site, and, therefore, county zoning regulation did not apply (*Madison County v. Patterson et al.*, 2013).

Summarized History of the Agriculture Exemption to County Zoning

Table 3-1. Summarized history of the Agriculture Exemption to County Zoning

Year	Government Body	Title	Outcome	Rule
1946	State Legislature	Farm Exempt	Agriculture Exemption to County Zoning is adopted with language, “agricultural purposes as a primary means of livelihood, while so used.”	--
1953	Iowa Attorney General	--	Use as primarily as a means of livelihood test was the dominant consideration.	The number of acres does not define agricultural purpose.
1963	State Legislature	Farm Exempt	Removed “as a primary means of livelihood” from statute.	--
1967	Iowa Attorney General	--	The gravel pit feedlot was subject to county zoning regulation, but the cropland was not.	The exemption applies if a use or structure is “carried on as part of the agricultural function”, but does not apply if it “is separately organized as an independent activity.”

Table 3-1 Cont'd. Summarized history of the Agriculture Exemption to County Zoning

Year	Government Body	Title	Outcome	Rule
1971	Iowa Supreme Court	<i>Farmegg Products Inc v. Humboldt County</i>	The buildings were determined to be commercial, not agricultural, and therefore subject to the setback.	The question of how to apply the exemption is not determined by the necessity of the activity to agriculture, nor by the physical similarity of the activity to other situations. The test is whether the activity in the particular case is carried on as part of the agricultural function or is separately organized as an independent productive activity.
1988	Iowa Supreme Court	<i>Helmke v. BOA, Ruthven</i>	Although the co-op did not plant, cultivate, or harvest the crops in the facility, the storage played a critical role in agriculture activities and determined that the exemption applied	Applied the test created in <i>Farmegg</i> , but the Court noted that distinguishing agricultural from commercial activity is not easy.
1993	Iowa Supreme Court	<i>DeCoster v. Franklin County</i>	Because a waste water system served only a hog confinement building, it served an agricultural purpose that fit the exemption.	Upheld and applied the test created in <i>Farmegg</i> .
1995	Iowa Supreme Court	<i>Thompson v. Hancock County</i>	The proposed hog confinement was an extension of the existing agricultural operation and fit the definition of agriculture; therefore the exemption applied.	The Court defined agriculture as, “the art and science of cultivating the ground, including harvesting of crops and rearing and management of livestock.”
1995	State Legislature	Farm Exempt	Added “primary” to “...adapted, by reason, of nature and area, for use for agricultural purposes, while so used.”	--

Table 3-1 Cont'd. Summarized history of the Agriculture Exemption to County Zoning

Year	Government Body	Title	Outcome	Rule
1996	Iowa Supreme Court	<i>Kuehl v. Cass County</i>	The proposed confinement is used for an agricultural purpose because it is adapted primarily for an agricultural use, the rearing of livestock.	Disproves the <i>Farmegg</i> decision. An exempt agricultural use must be in conjunction with a "traditional use".
1997	Iowa Attorney General	--	If agriculture is present on the property and the homeowner is engaged in agricultural activities, then the farm house is exempt from county zoning regulation.	For farm houses, the proper question to ask is whether the property is actually used for agricultural purposes, and in the cases of homes, whether the occupants are engaged in agriculture on the land where the home is purchased.
1998	Iowa Supreme Court	<i>Goodell v. Humboldt County</i>	The ordinances regulating CAFOs because they were preempted by state law.	Zoning regulations regulate land use by districts; if a regulation does not do this then it is not zoning.
2001	Iowa Attorney General	--	Small and large scale producers fit the exemption in different ways; decisions should not be made in abstract.	Defined industrial activity as the, "process of manufacturing, refining and purifying and excludes any process that does not change the character of an agricultural commodity."
2010	Iowa Court of Appeals	<i>Kramer et al. and Sioux Pharm Inc. v. Sioux County</i>	Because Sioux Pharm, who is not involved in raising crops or livestock, built the wastewater facility the exemption did not apply.	A structure must be <i>primarily</i> adapted for an agricultural purpose.

Table 3-1 Cont'd. Summarized history of the Agriculture Exemption to County Zoning

Year	Government Body	Title	Outcome	Rule
2013	Iowa Supreme Court	<i>Lang v. Linn County</i>	The Langs did not demonstrate that they were engaged primarily agricultural activities on the property and the exemption did not apply.	Landowners must be able to closely tie the activities of the person occupying the house to the agricultural production taking place on the property. County zoning administrators are allowed to look at a number of factors when deciding how to administer the exemption.
2013	Iowa Court of Appeals	<i>Madison County v. Patterson et al.</i>	Because the land in question was used primarily for agriculture before, during and after it was used as a landfill the exemption applied.	Other uses may be exempt based on how they accompany a continuous exempt use.

Conclusion

From the legislative history it is difficult to determine which agricultural activities and structures the Iowa legislature originally intended to exempt from county zoning regulation. The exemption was passed as industrial agriculture began to take root in the state. Initially, the legislature did not define agriculture; it was not until about 45 years later that the Court developed the definition of agriculture that is used today. Originally, the legislature offered one criterion to determine whether the exemption applies: the primary livelihood requirement. This requirement was later taken out by the legislature which broadened the exemption. Today, county zoning officials use the definition of agriculture created in *Thompson* to determine whether the land is used primarily for agriculture. If so, then the exemption applies. If not, then county regulations can be applied. This history of the exemption demonstrates that the court often relied on narrow technicalities that may not be easily understood by producers and

administrators. These technicalities and the way that the courts have written about them present barriers to knowledge being the dominate factor in this policy space.

As the history of the exemption demonstrates, questions related to the exemption can be complicated and often are decided on issues of fact and conceptions of agriculture that may or may not be understood by producers and administrators. This is one example of how local implementation history contributes to the policy space surrounding the exemption.

An important finding from the history is that once an agricultural use has been abandoned the exemption no longer applies. As land-owners change their operation or seek to build more housing on the property, the exemption status should be reviewed. Thus as local-market producers diversify their businesses they must continue to justify the continuance of their exempt status. It is critical that there is an ongoing dialogue between producer and administrator. The 1997 Attorney General Opinion defines a farm house as the residence of a farmer and the 2013 *Linn County* case demonstrates that county officials should be aware of multiple subdivisions of a property that is considered exempt. This history shows that even if a property is considered exempt, it is important to continue to monitor the property for violations.

Multiple cases demonstrated that where industrial activities were disguised as agricultural activities in order to be exempt from regulation. It is critical that county zoning administrators are provided with an explicit explanation of how activities are agricultural from the person seeking the exemption. With industrial and local-market agriculture there is not always a clear line between agriculture and commercial or industrial activities. When deciding whether the exemption applies, it is important for the land-owner to provide accurate and clear evidence to support their argument why the exemption applies. It is the responsibility of the county zoning officials to verify the information and thoroughly consider whether the activity is truly

agricultural. There is no requirement for a traditional agricultural activity to take place on the property, but the activity has to be primarily agricultural.

CHAPTER 4.

METHODS AND RESULTS

Methods

The purpose of this study is to explore how Iowa county zoning administrators make decisions regarding the agriculture exemption to county zoning found in Chapter 335 of the Iowa Code. The data analyzed in this study was collected through a survey sent out to county zoning administrators throughout the state. My research questions and hypotheses are summarized in Table 4-1 below³. The codebook for the survey which includes the survey questions and brief descriptions on how answers to questions were scored can be found in Appendix A.

Table 4-1. Research questions and hypotheses.

Research Questions	Hypotheses
1) How knowledgeable are Iowa county zoning administrators about the agriculture zoning exemption?	1) The knowledge of the agricultural exemption law is higher among zoning administrators in urban areas than in rural areas.
2) How do county zoning administrators balance their knowledge of the law with political influence in making their decisions of how to apply the agriculture zoning exemption?	2) County zoning administrators with more knowledge of the law experience less political influence. 3) Rural county zoning administrators experience more political influence than urban county zoning administrators.

³ I became interested in how county zoning administrators made decisions about the exemption through research about how administrators apply the exemption to local food scenarios. That work was funded by a grant from the Leopold Center for Sustainable Agriculture at Iowa State University.

Instrumentation and sample

County zoning administrators are local government officials who apply and administer county zoning regulations. Counties that do not have zoning, are partially zoned or only have subdivision ordinances were not surveyed for this study (Iowa Code §335.1). Figure 3-2 in the previous chapter shows which counties are and are not fully zoned (Buffington, 2015). The data used in this study was gathered through a state-wide survey to all county zoning administrators; in the 75 counties in the state which are fully zoned.

Because dissemination of knowledge and the role of agriculture in a community can vary between urban and rural counties I blocked the survey responses by this classification. To analyze this data, I categorized counties as urban and rural to evaluate varying levels of knowledge and political influence. The first way I did this was by blocking counties that are part of metropolitan statistical areas, micropolitan statistical areas, or neither. Figure 4-1 shows Iowa counties that fall within either Metropolitan or Micropolitan Statistical Areas as defined in 2013 by the United States Office of Management and Budget (Metropolitan Statistical Areas, 2013; Micropolitan Statistical Areas, 2013). A metropolitan statistical area consists of an urban core of 50,000 or more people and includes the counties containing the urban core, as well as adjacent counties that share social and economic resources. This is measured by commuting to work. Micropolitan statistical areas include an urban core between 10,000 and 50,000 people and also include adjacent counties which share resources (Metropolitan and Micropolitan Statistical Areas Main, 2016). I also look at counties by median county population of the survey respondents (20,604) and the state median county population (15,527) (American Community Survey, 2015).

Of the 26 administrators that responded to the survey 10 (38.5%) are rural counties, 7 (26.9%) are micropolitan and 9 (34.6%) are metropolitan counties. In the state of Iowa 61

(61.6%) of the 99 counties are rural, 17 (17.2%) are micropolitan and 21 (21.2%) are metropolitan. However, of the 75 counties that zone their entire jurisdiction 45 (60%) are rural, 11 (14.7%) are micropolitan, and 19 (25.3%) are metropolitan. Even though my survey responses are not a direct reflection of the geographic make up of the state these responses are still valid because all geographies are significantly represented in the responses.

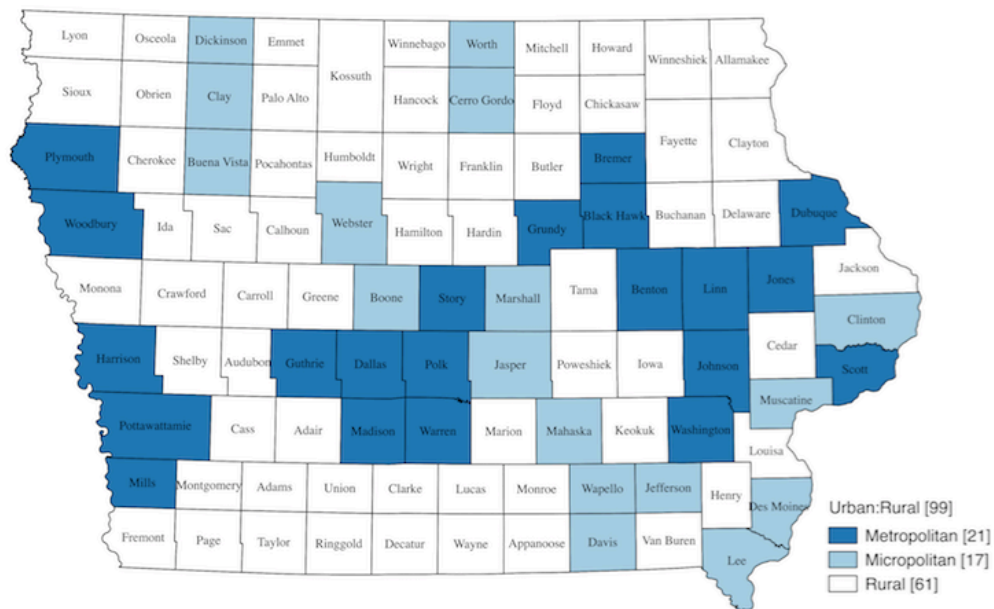


Figure 4-1. Metropolitan, Micropolitan and Rural counties in Iowa.

I collected data through a cross-sectional survey. I chose to use an email survey so that I could gather data from a larger number of county zoning administrators compared to how many I could reach through other methods. The survey aims to gather information on what factors influence administrators when they make decisions about how to administer the exemption. I emailed the survey to the “CoZo” (Iowa County Zoning Officials) listserv using Qualtrics, an online survey software, to gather the responses. All Iowa county zoning administrators are on this listserv. Online surveys have multiple benefits including: lower delivery cost, more design

options, less time to transmit and less time is spent on data entry (Fan & Yan, 2010). When I sent the survey I included information about why I conducted the survey, an explanation that participation was voluntary, my contact information if the respondent had any questions or concerns regarding the survey, and a link to the survey. I followed up this initial email with a reminder email a week before the survey closed. The survey was open from May 3 to May 19, 2016.

My survey consisted of 21 questions divided into the following four sections. The sections were:

- (1) Background: four questions asking for the geography of the county and how the county zoning administrator has interacted with the exemption in recent years;
- (2) Defining Iowa's Agriculture Zoning Exemption: five questions measuring the participant's knowledge about the exemption and five questions measuring the participant's knowledge of how to apply the exemption;
- (3) Exemption Protocol: two questions asking when the administrator gets involved and which indicators they use to determine whether the exemption applies; and
- (4) Deciding How to Apply the Exemption: five questions asking how the administrator interacts with the county board of supervisors, how decisions are made and what should be done to clarify the exemption.

After the survey closed I downloaded the data into Excel to conduct the coding and used JMP for statistical analysis.

The unit of analysis in this study is individual county zoning administrators. Iowa Code does not require counties to zone their entire jurisdiction, or adopt zoning at all; 75 of Iowa's 99 counties zone their entire jurisdiction. Of these 75 counties 26 responded to my survey, for a 34.67% response rate. All 75 county zoning administrators had the opportunity to respond to the survey. Participants responded to the survey independent of each other. My survey targeted the

organization level. Baruch and Holtom (2008) found that web surveys targeting organizations have an average response rate of 35.7 percent with a standard deviation of 18.8. Surveys targeting the individual level have a much higher response rate. My response rate falls close to the average response rate for web surveys. The results from this survey are generalizable to the population of all Iowa county zoning administrators because it is unlikely that the level of knowledge between the administrators who responded varies greatly from those who did not respond. Literature shows that these administrators are experts in their field, so it would be unwise to assume that this sample is not representative of the administrators across the state. Self-selected survey response is an issue in survey research, because there are no statistical methods that account for this issue, I conducted my analysis with the assumption that my survey response is representative (Babbie, 1990).

Survey quality

I took steps to ensure the reliability and validity of my survey throughout the research process. Reliability is defined as “the quality of measurement methods that suggests that the same data would have been collected each time in repeated observations of the same phenomenon” (Babbie, 1990, p. 378). To promote the reliability of my study I asked concise questions that are relevant to the policy and the administrators’ jobs. By coding the survey based on the correct answers and using an ordinal scale to measure political influence, it is reasonable to expect that the same data would be collected in repeated observations.

Validity is defined as “a measure that accurately reflects the *concept* it is intended to measure” (Babbie, 1990, p. 381, emphasis included). Validity cannot be proved, however, relative types of validity can be evaluated to support the overall validity of a survey. These

relative types include: face validity, criterion validity, content validity, construct validity, internal validity and external validity. Face validity is the quality of the indicator used to measure the variables in question (Babbie, 1990; Carmines and Zeller, 1979). Surveys have face validity when they ask about experiences that are relevant and that people will remember. Directly asking how the county board of supervisors is involved in making decisions regarding the exemption is an example of face validity in my survey. To promote content and construct validity I relied on the judicial and legislative history of the exemption to write the questions to ensure that the questions accurately relate to the exemption. For questions regarding political influence I relied on a review of policy space literature to understand how administrators can be influenced by elected officials and the difficulties they can face when they have to balance their knowledge with that political influence. Before sending the survey out to administrators I reviewed and revised the questions with my advisor. I used a series of hypotheses tests, regression models and descriptive statistics to evaluate my hypotheses.

Results

Background questions

Before discussing each hypothesis, I will provide some background on how frequently administrators are presented with questions regarding the exemption. For these background questions I consider urban counties to be metropolitan and micropolitan counties. Of the 26 county zoning administrators that responded to the survey 24 of them have worked with a landowner who asked to be exempt. The two that have not had a landowner ask to be exempt work in rural counties. Next, I asked administrators how many times they have denied the exemption in the past three years. Urban and rural counties have the same median number of

times denying the exemption; however urban counties have a much wider range and a higher average compared to rural counties.

Table 4-2. Number of time administrators have denied the exemption over the past three years.

	Urban	Rural	Total
Average	5.19	1.8	3.88
IQR	0, 1.5, 4.75	0, 1.5, 3.25	0, 1, 4
Min, Max	0, 37	0, 5	0, 37

In a related question asking whether the number of applications for the exemption has increased in the past three years, 23% of administrators said it has, 50% said it has not, and 27% were not sure. The administrators that are seeing an increase in the number of applications are more likely to work for an urban county (Table 4-3). The administrators in metropolitan and micropolitan counties (labeled as urban) are more likely to experience a higher number of applications and deny the exemption more times compared to their rural colleagues. This finding supports the concern expressed in the 2009 state-wide focus groups that identified the exemption as a barrier to local foods because local food producers are more likely to locate on the urban fringe so they can be close to their customers (Taylor et al, 2011).

Table 4-3. Administrators perceptions on whether the applications for the exemption has increased in the past three years.

	Urban	%	Rural	%
Yes	5	31%	1	10%
No	7	44%	6	60%
Not Sure	4	25%	3	30%

The language in the Iowa Code that provides for the exemption does not provide guidance on how to determine whether a structure or activity is agricultural. In many cases,

multiple indicators are necessary in order to make a decision. I asked administrators what indicators they use to determine whether the exemption applies to individual cases. The results can be seen below in Table 4-4. I asked administrators to check each indicator that they use. These responses demonstrate that a wide variety of factors are considered by administrators when they make their decisions regarding the exemption. No well-defined standard or set of criteria for applying the exemption is used, which demonstrates that the Iowa legislature has not provided clear guidance for how to apply the exemption.

Table 4-4. Indicators used to determine whether the exemption applies.

Answer	Total	Urban	Rural
Size of Farm	14	10	4
Use of Structure	23	13	10
History of Agriculture Activity of the Site	8	5	3
Purpose of Animals, If Present	16	8	8
Percentage of Total Income From Agricultural Activities	3	2	1
Filing of an IRS Schedule-F	11	6	5
Number of Hours Devoted to Agricultural Activities by Resident Landowner	6	5	1
Processing of Products Grown or Not Grown On-Site	5	2	3
Sales of Products Grown or Not Grown On-Site	6	2	4
Other (Please Specify)	6	6	0
Other Answers: “use of land”; “make interpretations on activities/complaints”; “answer yes to are you a farmer”; “cropping history with local FSA”; and “types of acres of crops; types [and number of] head of livestock. For houses: financial, management, and labor involvement in the farm operation of the proposed occupants.”			

I also asked administrators how they learned about the exemption. Most administrators learned about the exemption through formal training or through other administrators.

Table 4-5. Counts of how administrators learned about the exemption.

Answer	Total	Urban	Rural
I learned about the exemption by producer asking for it to apply to their property.	0	0	0
I learned about it through formal training as a zoning administrator.	17	12	5
I learned about it from other county zoning administrators.	15	8	7
I learned about it by county supervisors telling me how to apply it.	3	2	1
Other (Please Specify)	4	4	0
Other Responses: "Iowa Chapter 335.2"; "I grew up on a farm"; "I learned about the it through writing land use ordinances in various locations in North Central and East Central Iowa"; and "I read Chapter 335, various court cases and on the job training".			

From these background questions I learned that county zoning administrators are aware of the exemption, receive training related to the exemption and address questions regarding the exemption in their work. I found that administrators rely on a wide number of indicators to make their decisions regarding the exemption and because many indicators are used in making decisions, it is unlikely that the exemption is applied uniformly across the state.

Hypothesis one: The knowledge of the agricultural exemption law is higher among zoning urban areas than in rural areas.

To test this hypothesis, I assigned a composite score assessing the knowledge each administrator has regarding the exemption. The questions used to assess knowledge were questions 4 through 13 under the Defining Iowa's Agriculture Zoning Exemption section of the survey. One point was assigned to each correct answer and zero points were assigned to incorrect or unsure answers. Scores were based on a 0-10 range. Overall, the administrators scored high. The scores ranged from 3.67 up to a perfect ten. The mean score was 8.46. The inter-quartile

range was from 7.67 to 9.67 with a median of 8.67. The data appear to be skewed, but fit into a normal quantile plot fairly well as seen below in Figure 4-3. I used five questions to assess their knowledge of the law and five questions to assess their knowledge of how the exemption should be applied. I also calculated scores for these two subsections on a scale of 0 to 5.

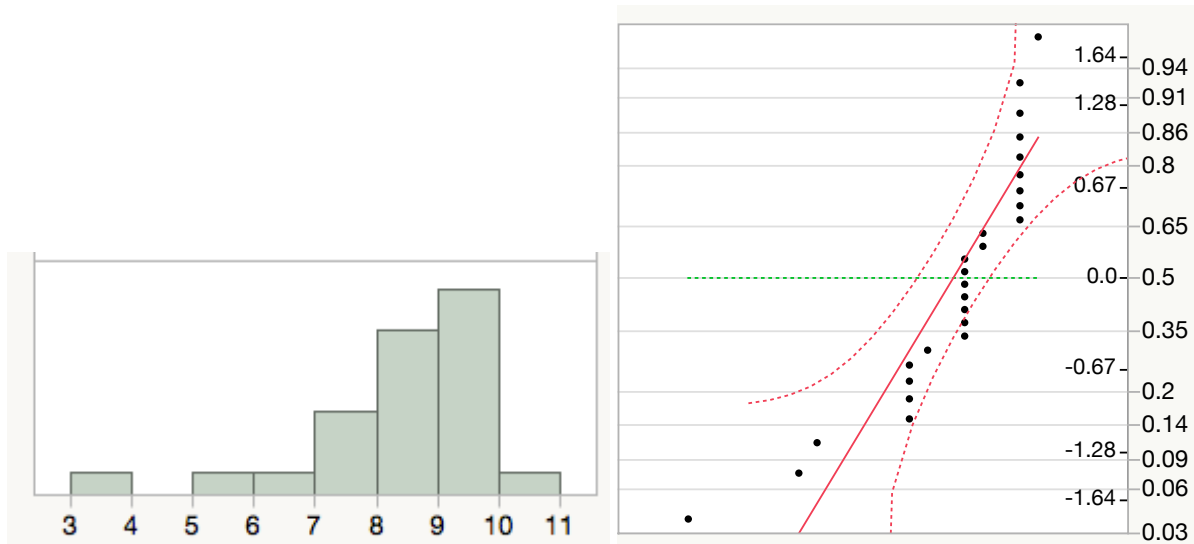


Figure 4-2. (Left) Histogram of total knowledge scores.

Figure 4-3. (Right) Normal quantile plot of knowledge scores.

To determine whether these scores varied based on geography I ran a series of two-sample t-tests to test this hypothesis. This test statistic indicates how many standard errors the sample mean deviates from the population mean and is recommended to use with sample sizes that are less than 30 (Devaux, Velleman, and Bock, 2011 & Johnson and Reynolds, 2008). There are a few conditions that must be met in order to run a t-test; and all conditions were met (Devaux, Velleman, and Bock, 2011). I assumed unequal variances for these tests because of the small sample size (Devaux, Velleman, and Bock, 2011).

I began by examining the variation in scores of all ten knowledge questions based on whether the administrators were from urban or rural counties. The intent behind this hypothesis is that counties with higher populations will be stricter about zoning regulations more people are interacting with the property and administrators might be more concerned about upholding the health, safety and welfare of farm visitors, neighboring landowners, and the public in general. Because there are multiple ways to evaluate this idea, I divided the survey responders into different groups, based on population (Table 4-6).

Table 4-6. Total knowledge scores compared by geography.

County Split	Sample Sizes High Population/Low (n)	Mean Score High Population/Low	Two-sample T- Statistic	P-Value
Metropolitan & Micropolitan v Rural ¹	16/10	8.65/8.17	0.70	0.49 ^{ns}
Metropolitan v Micropolitan & Rural ¹	9/17	8.37/8.51	-0.25	0.80 ^{ns}
Sample Counties Median Population (20,604) ²	13/13	8.57/8.36	0.35	0.73 ^{ns}
Iowa County Median Population (15,527) ²	22/4	8.81/6.59	1.90	0.14 ^{ns+}
¹ Counties determined by 2013 designations from the United States Office of Management and Budget. ² Counties determined by 2015 American Community Survey population estimates. ⁺ One-tailed test is significant at the 0.10 level. ^{ns} p > 0.10 **p ≤ 0.05 * p ≤ 0.10				

The data shows that there is no difference between county population and knowledge of the exemption. At the 0.10 level of significance, there is evidence that shows counties above the state median county population have more knowledge about the exemption. Because of the level

of significance and the size of the sample groups, this finding only offers limited support of the hypothesis. Additionally, I ran a series of t-tests to determine if there is a difference in knowledge of law or knowledge of how the law is applied between counties of different population sizes. The purpose of examining these two different types of knowledge is to determine whether the confusion of how the exemption should be applied comes from a lack of understanding of the policy or if it comes from not having clear instructions from the state legislature on how to apply it.

General knowledge of the exemption

Survey questions 5, 6, 10, 12 and 13 measure knowledge about the exemption itself; these questions can be found in the survey codebook in Appendix A. While looking at the distribution of scores out of five about general knowledge of the exemption among all survey participants there is a range a scores between 2.67 to a perfect score of 5. The mean score is 4.23 with a median of 4.67. Table 4-7 shows the comparison in knowledge scores across county population size.

Table 4-7. General knowledge scores compared by geography.

County Split	Sample Sizes High Population/Low (n)	Mean Score High Population/Low	Two-Sample T-Statistic	P-Value
Metropolitan & Micropolitan v Rural ¹	16/10	4.15/4.39	-0.81	0.43 ^{ns}
Metropolitan v Micropolitan & Rural ¹	9/17	4.04/4.35	-1.20	0.24 ^{ns}
Sample Counties Median Population (20,604) ²	13/13	4.11/4.36	-1.04	0.31 ^{ns}
Iowa County Median Population (15,527) ²	22/4	4.31/3.84	0.95	0.40 ^{ns}
¹ Counties determined by 2013 designations from the United States Office of Management and Budget. ² Counties determined by 2015 American Community Survey population estimates. ⁺ One-tailed test is significant at the 0.10 level. ^{ns} p > 0.10 **p ≤ 0.05 * p ≤ 0.10				

These results demonstrate that there is no significant difference between county population and the administrators' general knowledge of the exemption. This shows that administrators are learning consistent information about the exemption and demonstrates that their professional network is dispersing information about the exemption.

Knowledge of how to apply the exemption

Survey questions 7, 8, 9, 11 and 14 measure knowledge of how to apply the exemption; these questions can be found in the survey codebook in Appendix A. I did the same analysis for the questions that assessed the knowledge of how the exemption is applied. These scores ranged from 1 to 5 with a mean of 4.23 and a median of 5. There was one result that is significant at the 0.10 level.

Table 4-8. Applied knowledge scores compared by geography.

County Split	Sample Sizes High Population/Low (n)	Mean Score High Population/Low	Two-Sample T- Statistic	P-Value
Metropolitan & Micropolitan v Rural ¹	16/10	4.5/3.8	1.41	0.18 ^{ns+}
Metropolitan v Micropolitan & Rural ¹	9/17	4.33/4.18	0.33	0.74 ^{ns}
Sample Counties Median Population ²	13/13	4.46/4.40	1.03	0.31 ^{ns}
Iowa County Median Population ²	22/4	4.50/2.75	2.27	0.10 ^{*++}
¹ Counties determined by 2013 designations from the United States Office of Management and Budget. ² Counties determined by 2015 American Community Survey population estimates. ⁺ One-tailed test is significant at the 0.10 level. ⁺⁺ One-tailed test is significant at the 0.05 level. ^{ns} p > 0.10 **p ≤ 0.05 *p ≤ 0.10				

These results demonstrate that there is limited support for the hypothesis that county zoning administrators in larger counties have a higher level of knowledge about how to apply the exemption. At the 0.10 level of significance, administrators in metropolitan and micropolitan counties have a higher level of knowledge of how to apply the exemption. At the 0.05 level of significance, there is a difference between administrators in counties above the state median county population and administrators in counties below the state median county population; this test also shows that administrators in counties with the higher population have a higher level of knowledge of how to apply the exemption. In an earlier background question more administrators from these counties responded that they have seen an increase in the number of applications for the exemption. This result supports that administrators in these counties are learning about the exemption in order to respond to those applications in the most appropriate way.

To summarize, on average- counties of different population sizes have different levels of different types of knowledge. There is not a difference across the administrators' general knowledge about the exemption; which shows that administrators are knowledgeable about the exemption and are sharing appropriate information with each other. However, there is moderate indication that administrators in counties with higher populations have more knowledge about how to apply the exemption compared to counties with smaller population sizes. This could be because administrators in these counties reported seeing an increase in the number of applications for the exemption and therefore have to make decisions more often about how to apply the exemption. These findings moderately support my hypothesis that administrators in counties with a higher population have more knowledge of the exemption.

Hypothesis two: County zoning administrators with more knowledge of the law experience less political influence.

Literature suggests that even if administrators are knowledgeable about a policy, such as the exemption, there is pressure to be more accommodating when political actors, such as the county board of supervisors, are involved in code enforcement (Burby and May, 1998). County zoning administrators have to balance the presence of elected officials with their professional knowledge. I included three survey questions about how decisions regarding the exemption are made and what role the county board of supervisors plays in the decision making process. As discussed in the previous section, the administrators who responded to my survey demonstrated that they are knowledgeable about the exemption. Question 18 in the survey asked how county zoning administrators interact with the county board of supervisors in making decisions regarding the exemption (Table 4-9).

Table 4-9. County zoning administrators describe their interaction with their county board of supervisors and the exemption.

Response	Count
The county supervisors have explicitly told me how to apply the agriculture exemption.	1
The county supervisors have implicitly influenced how I apply the agriculture exemption.	2
The pressure to apply or not apply the agriculture exemption has varied considerably depending on the make up of the county board of supervisors.	1
The county supervisors have occasionally asked me questions about particular cases, but have mostly left the interpretation and application of the agricultural exemption to my discretion.	8
The county supervisors have always left the interpretation and application of the agricultural exemption to my discretion.	13

This response demonstrates that most of the survey participants do not feel that they are under any political influence in their decision making, but there are some administrators who feel influenced. This is important because this shows that there are administrators who believe they need to balance political influence with their knowledge regarding the exemption.

To gather more information on how administrators interact with the county board of supervisors in making decisions regarding the exemption I asked an open-ended question asking administrators to describe this interaction in their own words. From these comments I identified five themes that describe the various ways county zoning administrators interact with county supervisors (Table 4-10). For this analysis I included metropolitan and metropolitan counties in the urban category.

Table 4-10. Themes describing how administrators interact with the county board of supervisors over the exemption.

	No interaction	Only interact when there are issues	Elected officials are respectful	Ordinance makes the decision	Explicit political influence
Total	12	2	6	4	1
Urban (16)	7	0	4	4	1
Rural (9)	5	2	2	0	0

Twelve of the 25 administrators that responded explicitly stated that they do not interact with the county supervisors over the exemption. One participant reported that they do not interact with the county supervisors regarding the exemption and that formal questions go to the zoning board of adjustments. Another participant commented, “They are aware of the significant difficulties the exemption places on our work, but are typically hands-off in terms of administering it. In the past they have been involved in discussions about ordinance amendments.” Two of the 25 administrators commented on how the county supervisors get involved with a decision if an issue arises, such as a land owner complaining.

Six of 25 administrators commented on how the county supervisors trust their decisions and rely on them for their expertise regarding the exemption. These administrators report that the county supervisors trust them to be fair and consistent when applying the exemption. One administrator commented, “A board member may be approached by a resident about proposed construction on a property and ask whether a permit is necessary. The board member usually asks me my opinion and conveys my opinion to the property owner or asks them to call me directly.” Another said, “The Supervisors and I have been respectful of each other's opinion and they have, generally, been supportive of my interpretation.” These comments suggest that the administrator’s role as an expert is acknowledged and respected by elected officials.

Four of the 25 administrators commented that they strictly adhere to their local ordinance. Administrators mentioned specific acreage requirements that are written into their ordinances, if the acreage requirement is not met some counties ask producers to provide site or business plans. Administrators shared that their County Board of Supervisors support the interpretation in their local ordinances, but some would like to have more structure to the process. The responses to Question 20 elaborate on these findings. In this question I asked what administrators rely the most on when making their decisions of how to apply the exemption. The responses are shown in Table 4-11. The Other responses included ordinance language and the existence of a Schedule F. Of the 25 administrators that responded, 20 reported relying on their own interpretation of the exemption. In Question 18 the majority of administrators reported that applying the exemption was left to their discretion, and in Question 19 six administrators reported that their decisions were respected. All of these responses support each other, showing that these results are reliable. An interesting take away from this question is that in Question 17, 15 administrators reported that they learned about the exemption from other county zoning administrators. However, in this question only one administrator reported relying on advice from other county zoning administrators.

Table 4-11. When making decisions about how to administer the exemption administrators rely on their interpretation of the exemption.

Response	Count
My interpretation of the exemption	20
What the county supervisors have told me of the exemption	2
Advice from other county zoning administrators	1
Other	3

Although these responses demonstrate that many administrators do not perceive any political influence, there are some responses that demonstrate that some administrators experience political influence. To evaluate the correlation between political influence and knowledge, I created a series of ordinal logistic regressions and evaluated the strength of the correlation. To do this I used the total, general and applied knowledge scores as the dependent variables. To quantify political influence, which was the response variable, I created a three-point ordinal scale of the responses to Question 18 (Table 4-12). Points were assigned based on the level of political influence.

Table 4-12. Ordinal scale used to measure political influence.

Response	Point Value
The county supervisors have explicitly told me how to apply the agriculture exemption.	3
The county supervisors have implicitly influenced how I apply the agriculture exemption.	3
The pressure to apply or not apply the agriculture exemption has varied considerably depending on the make up of the county board of supervisors.	3
The county supervisors have occasionally asked me questions about particular cases, but have mostly left the interpretation and application of the agricultural exemption to my discretion.	2
The county supervisors have always left the interpretation and application of the agricultural exemption to my discretion.	1

I ran three regressions to compare the total knowledge score, the general knowledge about the exemption score and the score of knowledge of how to apply the exemption. Because there is not much variation in the data set, these regressions were inconclusive.

To get some understanding of this relationship I ran a linear regression to understand the strength of the relationship between knowledge and political influence. Again, I ran three regressions using the three knowledge scores as the independent variable and political influence as a continuous dependent variable. The linear regression model representing the relationship between the total knowledge score and political influence produced a correlation value of 0.24, meaning that there is a very weak positive correlation. The model was not significant. The linear regression model representing the relationship between general knowledge about the exemption and political influence produced a correlation value of 0.13, meaning that there is a very weak positive correlation. The model was not significant. The linear regression model representing the relationship between general knowledge about the exemption and political influence produced a correlation value of 0.36, meaning that there is a moderately strong positive correlation, but not significant correlation, between knowledge of how to apply the exemption and level of political influence. These correlation values are weak, but do suggest a slight correlation between high levels of knowledge and higher levels of political influence. Because of factors such as the sample size and lack of variation in some of the knowledge scores, I considered these results to be inconclusive.

This survey demonstrates that county zoning administrators are knowledgeable about the exemption and that they mostly do not perceive political influence. Administrators reported that their decisions are respected and that some rely strictly on ordinance language, whether that ordinance complies with case law regarding the exemption or not. Because of the small sample size and lack of variation in the data, statistical models are not adequate to describe this relationship. To draw conclusions regarding this hypothesis I rely on qualitative data from Question 19 of the survey and descriptive statistics from Question 18. These results show that for

the most part administrators reported no political influence and little to no interaction with the county board of supervisors regarding the exemption. Many administrators reported feeling respected and viewed as an expert in this area. These findings support the hypothesis. However, there are administrators who do feel political influence in their decision making process. This should be noted for future professional development and training opportunities.

Hypothesis three: Rural county zoning administrators experience more political influence than urban county zoning administrators.

I hypothesized that county zoning administrators who work in rural counties experience more political influence compared to their colleagues in urban (metropolitan and micropolitan) counties because there are a lot of industrial farms in rural areas and agriculture is intertwined with the social and economic culture in these areas; I thought it might be more likely for elected officials to ask administrators to “look the other way” for their farmer neighbors and agricultural businesses when applying the exemption.

A small group of administrators reported feeling political influence in their decision making. Using the ordinal scale (Table 4-12), only four administrators reported consistently feeling political influence. Of these four administrators two are from metropolitan counties and two are from micropolitan counties. Because no administrators in rural counties answered this way demonstrates that my hypothesis is incorrect.

Table 4-13. Ordinal levels of political influence.

	No Political Influence	Occasional Political Influence	Consistent Political Influence
Total (25)	13	8	4
Urban (16)	6	6	4
Rural (9)	7	2	0

Returning back to Table 4-10; five of the nine responding administrators in rural counties reported having no interaction with county supervisors over the exemption. The only administrator who reported explicit political influence works in a micropolitan county.

Table 4-14. Themes describing how administrators interact with the county board of supervisors over the exemption.

	No interaction	Only interact when there are issues	Elected officials are respectful	Ordinance makes the decision	Explicit political influence
Total (25)	12	2	6	4	1
Urban (16)	7	0	4	4	1
Rural (9)	5	2	2	0	0

One reason that this disparity exists could be that agritourism farms are more likely to be located closer to towns and urban areas because there is a larger customer base. Agritourism businesses invite the public out to their farms for agricultural activities such as u-pick produce, corn mazes and on-farm events. Other local-market activities such as on-site processing and sales can also raise red flags for zoning administrators. Further investigation into how decisions regarding how to apply the exemption to these situations would be valuable. Large-scale farms are prominent in rural areas, these farms are easier to fit into traditional understandings of agriculture and the definition of agriculture provided by the Iowa Supreme Court compared to

local market farms. My survey did not gather data on this distinction, but this would be an area for future study.

Conclusion and Summary

This analysis provided information about how Iowa county zoning administrators make decisions about the Agriculture Exemption to County Zoning. This analysis provided evidence that moderately supported two of my hypothesis and did not support the last one. There is moderate evidence to support the hypothesis that urban county zoning administrators have a higher level of knowledge about the exemption compared to their rural colleagues. There was not much evidence to suggest there is a difference in the overall level of knowledge about the exemption. I found that administrators in urban counties have a higher level of knowledge of how to apply the exemption on average than administrators in rural counties. There is no difference among counties on the level of general knowledge about the exemption; this supports the strength of the professional network across the state.

There is moderate support for the second hypothesis. To test this hypothesis statistical models were not able to adequately explain the relationship between knowledge of the exemption and level of political influence because the survey data lacked variation. A small proportion of survey respondents reported feeling influence. Open-ended responses made up for this deficit. These responses showed that many administrators report little to no interaction with the county supervisors regarding the exemption and feel that they are perceived as experts and that their decisions are respected and supported. Some administrators responded that they perceive their decisions are influenced by the county supervisors.

The evidence does not support the third hypothesis. Administrators in metropolitan and micropolitan counties reported that they feel that their decisions are influenced by the county supervisors. No rural counties reported feeling this way. This does not support the third hypothesis. One finding from the survey was that administrators in metropolitan and micropolitan counties are more likely to notice an increase in applications for the exemption, and are also more likely to deny the exemption more often. This can be a barrier to local market agricultural enterprises. Since administrators in these counties are more likely to feel political influence it is necessary to address political influence when discussing local foods and the exemption. The next chapter will discuss how the survey results fit into the policy space described earlier.

CHAPTER 5.**DISCUSSION AND CONCLUSION****Summary of Findings**

Hypothesis one: The knowledge of the agricultural exemption law is higher among zoning urban areas than in rural areas.

There is evidence to moderately support this hypothesis. The evidence does not show a difference across counties of general knowledge about the exemption. The evidence shows that administrators are knowledgeable about the exemption and are sharing appropriate information with each other. On the other side, there is moderate support for administrators in counties with higher populations (above the median county population and a metropolitan or micropolitan area) to have more knowledge about how to apply the exemption. The same group reported denying the exemption more times than their colleagues in rural counties. Survey results suggest that administrators are making knowledgeable decisions when deciding how to apply the exemption.

Hypothesis two: County zoning administrators with more knowledge of the law experience less political influence.

There is strong support for this hypothesis. Overall administrators demonstrated that they are knowledgeable about the exemption; and that political influence is largely not an issue, but it is a concern in some cases. 21 out of 26 (80.1%) of the responding administrators reported that they either have no interaction with the County Board of Supervisors or that the Board is

respectful of their position to make decisions regarding the exemption. Based on themes from qualitative analysis, 12 of 25 (48%) of responding administrators reported that they do not interact with the supervisors about the exemption, and two more (8.0%) reported that they only interact with the supervisors when there is an issue. 20 of 26 (76.9%) of responding administrators reported that they rely on their interpretation of the exemption to make decisions of how to administer the exemption. However, 2 of 26 (7.7%) administrators responded that they rely on what they county supervisors told them of the exemption to decide how to administer the decision. This demonstrates that administrators do perceive political influence in some instances, but overall it is not a widespread concern.

Hypothesis three: Rural county zoning administrators experience more political influence than urban county zoning administrators.

The evidence does not support this hypothesis, instead urban administrators reported feeling more pressure. As discussed above, a majority of survey participants reported that they do not experience political influence in their decision making. Two of nine (22.2%) of responding rural administrators reported occasional political influence, compared to six of 16 (37.5%) urban administrators who reported occasional influence and four of sixteen (25.0%) reported consistent influence. Because administrators in urban counties are more likely to see a greater number of applications, deny the exemption more times on average compared to their rural colleagues and feel political influence from the county board of supervisors, local-market producers may receive an incorrect and unfair decision of how to apply the exception to their business and property. Because there is not a lot of knowledge about how the exemption applies

to local market production, trainings should focus on this topic and should reach elected officials as well as county zoning administrators.

Results Within Policy Space Framework

Knowledge

County zoning administrators are trusted land-use experts in their communities; their status as experts means that professional knowledge should be trusted as the dominant factor in decision making. This was supported by the survey results; the mean total knowledge score was 8.46 out of 10, but the scores ranged from 3.67 to 10. Overall, these results confirm the expertise of county zoning administrators. Administrators have the same available information about the exemption from the state legislative and judicial branches available to them. Administrators responded that they learned about the exemption through formal training; ten of the 26 (38.5%) survey participants reported that they think there should be more statewide trainings on the exemption. However, how this information is applied is dependent on how the administrator interprets the information, which multiple factors can influence.

The responses to the knowledge questions also provide an example of interpretive policy analysis (IPA) in action. IPA emphasizes the construction and mobilization of meaning that gets translated into practices, with emphasis on networks on knowledge (Healey, 2013). When asked how they learned about the exemption, 15 of 26 (57.7%) administrators reported that they learned about it from other county zoning administrators. This shows the strength of their professional network and how it can be used to define policy discourses. These results show that administrators within similar geographies construct similar meaning and understanding of the exemption. This could be because administrators within similar geographies also work within

similar ‘climate of concepts’ (Healey, 2013). For example, it is likely that administrators in smaller counties interact more closely with agricultural activities and structures more frequently and have a greater understanding of why policies such as the exemption exist. Administrators in larger areas may interact with agriculture less frequently and may have more of an interest in regulating the activity because of the proximity to more people. These hypotheses need further testing, but demonstrate the messy nature of conceptualizing policy discourses as described under IPA.

Political influence

Political influence in decision-making should be kept to a minimum, but it is an important factor to consider when evaluating how policies are administered. The first thing to identify when evaluating political influence is where the power is and who holds that power. In the case of the exemption members of the county board of supervisors hold this power and can either explicitly or implicitly influence county zoning administrators. The survey results show that the level of political influence varies across the state. Overall, many administrators do not perceive that they are under political influence and are able to exercise their discretion as they see fit. The results of this analysis demonstrate that there is room for the knowledge of the administrator to be the dominate decision making factor. However, there is evidence that some administrators are either explicitly or implicitly influenced.

It is important to recognize the diversity in experiences across the state. One administrator reported that they experience explicit political influence. To explain how they experience this influence they simply said, “I do what they say.” While only one of 26 administrators responded that they experience this type of influence, there could be more across

the state that feel this pressure. This is why it is important to include elected officials in trainings. Politicians and their influence are part of an administrator's network that shapes their policy discourse; because there is evidence of political influence, how to address this type of influence should be addressed in formal trainings.

Local implementation history

As described earlier, there are two important components to consider when evaluating the role that local implementation history plays in decision-making: 1) how local knowledge affects the administrator's understanding of the policy; and 2) previous decisions set precedent for future decisions. Twenty of 26 administrators reported that they primarily rely on their interpretation of the exemption when making decisions of how to apply it. This means that they look for indicators and concepts that fit into their worldview of agriculture. Local food and value-added producers are more likely to be located in urban counties in order to be closer to their markets. Historically, agriculture in Iowa has been more industrial in nature. It may not be accurate or fair for administrators to deny the exemption because a type of agriculture does not meet their understanding of agriculture.

When asked which factors they consider when determining how to apply the exemption administrators gave a range of responses, partly because they need to consider multiple factors when making these decisions, and they need multiple indicators to demonstrate whether an application fits their conception of agriculture. An issue with some of the factors administrators evaluate is that they contradict judicial precedent. For example, some administrators responded that they consider farm size and percentage of total income from agricultural activities. These tests have been explicitly addressed in the judicial system and state legislature and have been

found to be insufficient. Considering these factors on their own contradicts precedent and can contribute to confusion over the exemption.

When asked how they interact with the county board of supervisors over the exemption four administrators responded that the county ordinance is the dominant decision maker. Following county policy over political influence is good, but when administrators described their county ordinances it is clear that some ordinances contradict precedent. State courts have not explicitly addressed the use of a Schedule F, however the 1953 Iowa Attorney General Opinion determined that the use of the land, not the number of acres determines whether the exemption applies or not. When asked how they interact with the county board of supervisors three of the respondents referenced their county ordinance that specifies a minimum acreage requirement. To accurately apply the exemption, it is important that county ordinances align with judicial and legislative precedent. It is important for administrators to be aware of this precedent so their decisions are accurate and fair for their community and for other administrators in their professional network.

Administrators would like clarification of the exemption moving forward; 19 of the 26 (73.1%) administrators reported that they think the state legislature should update the exemption and include guidance in how to apply it. Two of 26 (7.7%) of participants reported that they think the state judicial system should hear more cases regarding the exemption to provide more judicial precedence. Four (15.4%) respondents specified that farm houses and dwelling should be addressed in policy language by excluding them from the exemption. More guidance from the state legislative and judicial branches would clarify how administrators administer the exemption and ensure that it is administered correctly.

Limitations

A major limitation of this research is the small sample size. 75 of Iowa's 99 counties are fully zoned. Of those 75 counties, 26 county zoning administrators responded to this survey for a response rate of 34.6%. While this response rate falls within one standard deviation of the mean response rate for online surveys targeting the organization level (35.7%), it is helpful to have more data (Baruch and Holtom, 2008). It is common for administrative surveys to have low response rates, and conducting the survey at the beginning of summer was probably not the best time for a high response rate. Also, the survey was sent out through a listserv, it is a possibility that more administrators would have responded to a personalized email. A larger sample size makes it easier to assess generalizability of the results.

Another limitation of this research was the length of the survey. I wrote the survey with as few questions as possible to capture the three factors contributing to policy space, but capturing political influence and local ideologies in a short survey was difficult. A longer survey on the same policy will be sent to the same listserv, so to encourage response rates for both surveys I tried to keep mine at a reasonable length.

The majority of the questions in my survey were closed ended questions, this made capturing concepts like political influence and local ideologies difficult. These concepts can be experienced in a variety of ways and can have different meanings to different individuals. I did use some open ended questions, but methods for this type of study can be further developed. Surveys are a popular method to use for policy space research, but to further develop the idea of policy space and further develop the methods use to study this idea further studies could utilize methods such as political ethnography and interviews to add to the literature.

Implications and Recommendations

This research provides insight into how county zoning administrators are making decisions regarding the Agriculture Exemption to County Zoning and provides an example of how administrators navigate a policy space when provided with an ambiguous policy. This study shows areas where the exemption may not be applied in accordance with the intent of the policy.

Based on the findings from this research, I recommend a few practical actions. First, organizations such as Iowa State University Extension and Outreach and professional planning organizations, such as the Iowa Chapter of the American Planning Association should address the exemption when designing professional development curriculum and target those trainings at administrators and elected officials. While these trainings would benefit county zoning administrators, they could also benefit elected officials. Even though many survey participants reported little to no political influence, there were participants who reported implicit and explicit political influence from the county board of supervisors. For this reason, it would be beneficial to have a training for county zoning administrators and the county board of supervisors. The trainings could be done together or separately, but both groups could benefit from understanding the judicial and legislative history of the exemption.

Another important outreach and education opportunity that arises from this study applies specifically to metropolitan and micropolitan counties. These administrators reported an increase in the number of applications they receive for the exemption. In order to encourage local food systems in Iowa it would be helpful to administer and hold trainings over the *Local Foods and County Zoning Guidebook* from Iowa State University Extension and Outreach. There is no guidance from the policy about how the exemption applies to local foods, so having a resource for administrators to turn to would be beneficial in supporting local food systems in Iowa.

Lastly, professional planning organizations in Iowa, such as the Iowa Chapter of the American Planning Association, have specific lobbying priorities for the state legislature who could be useful in organizing this effort. Lobbying the state legislature to update the exemption could be added to that list.

Future Research

Because of the ambiguous nature of the exemption and the lack of guidelines for decision making, there are other questions around these topics. Producers are responsible for explaining why the exemption applies to their property. Each county has their own protocol for producers to apply for the exemption. It would be interesting to talk to producers to learn what they know about the exemption, what they understand about the application process and how they interact with county zoning administrators to determine how to apply the exemption. If there were to be a lobbying effort, it would be helpful to get input from producers on how the exemption can be clarified so it can be applied fairly.

Another line of inquiry would be to learn more about what different administrators consider to be agriculture. Because the Iowa Supreme Court provided an ambiguous definition of agriculture it would be helpful to survey county zoning administrators asking what they consider to be agricultural versus another type of use or activity. This could help show how agriculture is conceptualized across the state and give insight into how the definition from *Thompson* guides decisions.

Lastly, it would be insightful to explore what other methods can be used to better understand this concept. Surveys are useful because researchers can gather input from a larger number of policy actors, but capturing abstract ideas, such as political influence and local

cultural contexts, can be difficult with this method. It would be useful to conduct a policy space study utilizing mixed-methods that make use of a survey, but also includes interviews or focus groups to further explore the complexity of administrative decision making.

Conclusion

While the ambiguous language of the Agriculture Exemption from County Zoning contributes to a policy space that makes Iowa county zoning administrators susceptible to political pressure and multiple interpretations of agriculture across the state, this study has captured how these administrators are making decisions across the state. While results from this study were overall encouraging that administrators are making fair decisions, there is a need for more trainings as agriculture continues to evolve across the state. As local food systems expand across the state, and as industrial agriculture continues to prosper in the state, it is important for county zoning administrators to be able to distinguish between agricultural and commercial structures and activities.

BIBLIOGRAPHY

- Allensworth, D. T. (1980). *City planning politics*. New York, NY: Praeger.
- Babbie, E. R. (1990). *Survey research methods*. Belmont, CA: Wadsworth Pub.
- Barnes, C. J. (2008). Agriculture Zoning Exemptions: Cultivating Chaos in the Twenty-First Century. Retrieved February 7, 2016, from <http://students.law.drake.edu/aglawjournal/docs/agVol13No1-Barnes.pdf>
- Baruch, Y., & Holtom, B. C. (2008). Survey response rate levels and trends in organizational research. *Human Relations*, 61(8), 1139–1160. <http://doi.org/10.1177/0018726708094863>
- Blowers, A. (1980). *The limits of power: The politics of local planning policy*. London: Pergamon Press.
- Bruff, G. E., & Wood, A. P. (2000). Making sense of sustainable development: Politicians, professionals, and policies in local planning. *Environment and Planning C: Government and Policy*, 18(5), 593–607. <http://doi.org/10.1068/c9941>
- Buffington, J. (2015). *Status of zoning in Iowa counties 2015*. County Zoning Officials of Iowa.
- Burby, R. J., May, P. J., & Paterson, R. C. (1998). Improving Compliance with Regulations: Choices and Outcomes for Local Government. *Journal of the American Planning Association*, 64(February 2015), 324–334. <http://doi.org/10.1080/01944369808975989>
- Carmines, E. and Zeller, R. (1979). *Reliability and validity assessment*. Beverly Hills, CA: Sage.
- Cohen, M. D., March, J. G., & Olsen, J. P. (1972). A Garbage Can Model of Organizational Choice. *Administrative Science Quarterly*, 17(1), 1-25. doi:10.2307/2392088

Colebatch, H. K. (2006). What work makes policy? *Policy Sciences*, 39(4), 309–321.

<http://doi.org/10.1007/s11077-006-9025-4>

Corburn, J. (2003). Bringing Local Knowledge into Environmental Decision Making: Improving Urban Planning for Communities at Risk. *Journal of Planning Education and Research*, 22(4), 420–433. <http://doi.org/10.1177/0739456X03022004008>

Davidoff, P. (1965) Advocacy and pluralism in planning. *Journal of the American Institute of Planning*, 31(Nov), 331-338.

DeCoster vs. Franklin County. 497 N.W.2d 849, Supreme Court of Iowa. 1993.

Deegan, M. A. (2006). Defining the Policy Space for Disaster Management: A System Dynamics Approach to U.S. Flood Policy Analysis. *New York, 1009*, 1. Retrieved from <http://www.systemdynamics.org/conferences/2006/proceed/papers/DEEGA373.pdf>

DeVeaux, R., Velleman, P., and Bock, D. (2011). *Stats: Data and Models*. Upper Saddle River, New Jersey: Prentice-Hall, Inc.

Easton, D. (1965). *A framework for political analysis*. Englewood Cliffs, NJ: Prentice-Hall.

Euclid v. Amber Realty Co., 272 U.S. 365, United State Supreme Court.(1926).

Fan, W., & Yan, Z. (2010). Factors affecting response rates of the web survey: A systematic review. *Computers in Human Behavior*, 6, 132-139.

Farmegg Products Inc vs. Humboldt County. 190 N.W.2d 454, Supreme court of Iowa. (1971).

Goodell vs. Humboldt County, 575 N.W.2d 486, Supreme Court of Iowa. 1998.

Hamilton, N. D. (1981). An Agricultural Law Research Article Freedom to Farm! Understanding the Agricultural Exemption to County Zoning in Iowa by IOWA. *Drake Law Review*,

31(565), 565–585. Retrieved from http://www.nationalaglawcenter.org/wp-content/uploads/assets/bibarticles/hamilton_freedom.pdf

Hamilton, N. D. (1998). Right-to-Farm Laws Reconsidered: Ten Reasons Why Legislative Efforts to Resolve Agricultural Nuisances May Be Ineffective. *DRAKE J. AGRIC. L.*, 103(479). Retrieved from http://www.nationalaglawcenter.org/wp-content/uploads/assets/bibarticles/hamilton_ten.pdf

Helmke vs. Board of Adjustment (BOA), Ruthven. 418 N.W.2d 346, Supreme Court of Iowa. (1988).

Healey, P. (1990). Policy processes in planning. *Policy and Politics*. 18(2), 91-103.

Healey, P. (2012). Traditions of Planning Thought. In S. Fainstein & S. Campbell (2012), *Readings in Planning Theory* (3rd ed., pp. 214-233). West Sussex: Wiley-Blackwell.

Healey, P. (2013). Circuits of knowledge and techniques: The transnational flow of planning ideas and practices. *International Journal of Urban and Regional Research*, 37(5), 1510–1526. <http://doi.org/10.1111/1468-2427.12044>

Iowa Attorney General Opinion [No docket number]. (1953, 16 Oct.).

Iowa Attorney General Opinion [67-12-7]. (1967, 12 Dec.).

Iowa Attorney General Opinion [97-1-1(L)]. (1997, 17 Jan.).

Iowa Attorney General Opinion [01-2-1]. (2001, 1 Feb.).

Johnson, J. B., & Reynolds, H. T. (2008). *Working with political science research methods: Problems and exercises*. Washington, D.C.: CQ Press.

- Keiser, L.R. (1999). State bureaucratic discretion and the administration of social welfare programs: the case of Social Security Disability. *Journal of Public Administration Research and Theory*, 9(1), 87-106.
- Kitchen, T. (1997). *People, politics, policies and plans: The city planning process in contemporary Britain*. London: Paul Chapman Pub.
- Kramer et al. and Sioux Pharm Inc. vs. Sioux County*, 795 N.W.2d 86, Iowa Court of Appeals. (2010).
- Kuehl vs. Cass County*, 555 N.W.2d 686, Supreme Court of Iowa. (1996).
- Lang vs. Linn County Board of Adjustment*, 829 N.W.2d 1, Supreme Court of Iowa. (2013).
- Lewin, L., Lewin, B., Bäck, H., & Westin, L. (2008). A Kinder, Gentler Democracy? The Consensus Model and Swedish Disability Politics. *Scandinavian Political Studies*, 31(3), 291-310. doi:10.1111/j.1467-9477.2008.00207.x
- Lindblom, C. (1959). The Science of “Muddling Through”, *Public Administration Review*, 19 *SRC*, 79–88.
- Lipsky, M. (1980). *Street-level bureaucracy: Dilemmas of the individual in public services*. New York, NY: Russell Sage Foundation.
- Madison County vs. Patterson et al.*, 834 N.W.2d 872 Iowa Court of Appeals. (2013).
- March, J. G., & Olsen, J. P. (1986). Garbage Can Models of Decision Making in Organizations. In *Ambiguity and Command: Organizational Perspectives on Military Decision Making*. Cambridge, MA: Ballinger.
- March, J. G., & Olsen, J. P. (1976). *Ambiguity and choice in organizations*. Bergen: Universitetsforlaget.

- Matland, R. E. (1995). Synthesizing the Implementation Literature: The Ambiguity-Conflict Model of Policy Implementation. *J. Public Adm. Res. Theory.*, 5(2), 145–174. Retrieved from <http://jpart.oxfordjournals.org/content/5/2/145.short>
- May, P. J., & Burby, R. (1998). Making Sense Out of Regulatory Enforcement. *Law & Policy*, 20(2), 157–182. <http://doi.org/10.1111/1467-9930.00046>
- May, P. J., Jochim, A. E., & Pump, B. (2013). Political Limits to the Processing of Policy Problems. *Politics and Governance*, 1(2), 104–116. <http://doi.org/10.12924/pag2013.01020104>
- May, P. J., & Winter, S. C. (2007). Politicians, managers, and street-level bureaucrats: Influences on policy implementation. *Journal of Public Administration Research and Theory*, 19(3), 453–476. <http://doi.org/10.1093/jopart/mum030>
- Mayer, J. (2009). Policy space: What, for what, and where? *Development Policy Review*, 27(4), 373–395. <http://doi.org/10.1111/j.1467-7679.2009.00452.x>
- Maynard-Moody, S., and Musheno, M. (2000). State agent or citizen agent: Two narratives of discretion. *Journal of Public Administration Research and Theory* 10:329–58.
- Maynard-Moody, S., Musheno, M., & Palumbo, D. (1990). Street-Wise Social Policy: Resolving the Dilemma of Street-Level Influence and Successful Implementation. *Western Political Quarterly*, 43(4), 833-848. doi:10.1177/106591299004300409
- Meadows, D. H. (2008). *Thinking in systems: A primer* (D. Wright, Ed.). White River Junction, VT: Chelsea Green Pub.
- Metropolitan and Micropolitan Statistical Areas Main. (2016). In *U.S. Census Bureau*. Retrieved from <https://www.census.gov/population/metro/>

- Metropolitan Statistical Areas. (2013). Iowa State University Iowa Community Indicators Program. Retrieved from <http://www.icip.iastate.edu/maps/refmaps/msas>
- Meyers, M. K., & Vorsanger, S. (2003). Street-Level Bureaucrats and the Implementation of Public Policy. In *Handbook of Public Administration* (pp. 245–55).
<http://doi.org/10.4135/9781848608214>
- Micropolitan Statistical Areas (2013). Iowa State University Iowa Community Indicators Program. Retrieved from <http://www.icip.iastate.edu/maps/refmaps/micros>
- Mutel, C. F. (2008). *The emerald horizon: The history of nature in Iowa*. Iowa City: University of Iowa Press.
- Norton, R. (2011). Who Decides, How, and Why? Retrieved February 9, 2016, from <http://www.jstor.org/stable/pdf/41638052.pdf?acceptTC=true>
- Payne v. Tennessee*, 501 U. S. 808, 827–828, United States Supreme Court. (1991).
- Rydin, Y. (2007). Re-examining the role of knowledge within planning theory'. *Planning Theory*, 6(1), 52–68. <http://doi.org/10.1177/1473095207075161>
- Stensöta, H. O. (2012). Political influence on street-level bureaucratic outcome: Testing the interaction between bureaucratic ideology and local community political orientation. *Journal of Public Administration Research and Theory*, 22(3), 553–571.
<http://doi.org/10.1093/jopart/mur062>
- Taylor, G., Vandehaar, A., & Lauer, S. (2011). *The Intersection of Local Food Systems and the Agricultural Exemption to Iowa County Zoning Qualification for the exemption analysis of the use of the land or show that the activity in question*. Retrieved from <https://blogs.extension.iastate.edu/planningBLUZ>
- Thompson vs. Hancock County*, 539 N.W.2d 19.1, Supreme Court of Iowa. (1995).

Torgerson, D. (1986). Between knowledge and politics: Three faces of policy analysis. *Policy Sciences*, 19(1), 33–59. <http://doi.org/10.1007/BF02124483>

U.S. Census Bureau; American Community Survey, 2015 American Community Survey 1-Year Estimates; using American Fact Finder.

Vickers, G. (1965). *The art of judgment; a study of policy making*. New York, NY: Basic Books.

Weber, M. (1964). *The theory of social and economic organization*. New York, NY: The Free Press.

APPENDIX.**COUNTY ZONING ADMINISTRATOR SURVEY CODEBOOK****Background Questions**

1. Do you work for a metropolitan, micropolitan or rural county? (Select the county that you work for)

Urban: Plymouth, Woodbury, Harrison, Pottawattamie, Mills, Guthrie, Dallas, Polk, Madison, Warren, Story, Grundy, Black Hawk, Bremer, Benton, Linn, Johnson, Washington, Jones, Dubuque or Scott. Dickinson, Clay, Buena Vista, Webster, Boone, Worth, Cerro Gordo, Marshall, Jasper, Mahaska, Wapello, Davis, Jefferson, Lee, Des Moines, Muscatine or Clinton.

Rural: All Other Counties

2. Has a landowner asked to be considered exempt under the agriculture exemption?
 Yes
 No
3. How many times have you denied the exemption in the past three years? _____
4. Has the number of applications for the exemption increased in your county in the past three years?
 Yes
 No
 Not sure

Define Iowa's Agriculture Zoning Exemption

5. Are you aware of Iowa's County Zoning Agriculture Exemption (Iowa Code, Ch.335)?
 If yes, answer questions 5-13.

1 pt Yes
0 pt No

6. Which language most closely matches the language of the Agriculture Exemption?
 (Select one answer)
- 0 pt "...all buildings and activities on land in an Agricultural zoning district" are exempt from county zoning regulation.
- 1 pt "...land, farm houses, farm barns, farm outbuildings, or other buildings or structures which are primarily adapted by reason of nature and area, for use for agricultural purposes, while so used" are exempt from county zoning regulation.
- 0 pt "...all buildings and activities related to producing crops or rearing livestock, including but not limited to: farm houses, barns, other buildings and structures, any processing of an agricultural product and sales of agricultural products grown on-site" are exempt from county zoning regulation.

7. Please select one statement that best describes your opinion of how the exemption applies to buildings. (Select one answer)
1 pt Buildings and structures that are constructed for agricultural purposes are exempt from county zoning ordinances.
0 pt Any structure on agricultural land is exempt from county zoning ordinances.
0 pt Not Sure
8. True or False: If crops are not grown on the property, regardless of other agricultural activity, the land cannot be considered agricultural and therefore cannot be exempt from county zoning regulation. (Please select one answer).
0 pt True
1 pt False
0 pt Not Sure
9. Please select one statement that best describes your opinion how the exemption applies to on-site sales of produce grown on the farm.
0 pt The on-site sales are always exempt from county zoning because they are an agricultural activity.
0 pt On-site sales are never exempt from county zoning because they are a commercial activity.
1 pt Iowa Code is not clear on whether this activity is exempt and each county interprets the law as they see fit and each county interprets the law as they see fit.
0 pt Not Sure
10. Which is the more appropriate word to use in determining whether the agriculture exemption applies?
0 pt Farm
1 pt Agriculture
0 pt Not sure
11. True/False: There is a minimum acreage requirement for a property to be considered eligible for the agricultural exemption.
0 pt True
1 pt False
0 pt Not Sure
12. Which of the following are considered traditional agricultural activities that are typically considered to be eligible for the exemption? (Check all that apply)
1/3 pt Crop Production
1/3 pt Livestock Rearing (except for commercial lots)
1/3 pt Any Livestock Rearing
0 pt Corn Mazes
0 pt Not Sure

13. True/False: The agriculture exemption outright bans certain types of agriculture that are not considered exempt.

0 pt True

1 pt False

0 pt Not Sure

14. True/False: 51% or more of the property owner's income must come from the farm in order for the agriculture exemption to apply.

0 pt True

1 pt False

0 pt Not Sure

Exemption Protocol

15. Which of the following best describes how the exemption is handled in your county:

We only become involved if a neighbor/resident complains about an activity on agricultural land.

We ask landowners to come in and talk to us before starting a new ag-related venture.

We require landowners to fill out a form explaining any new ag-related venture.

16. How do you decide whether the exemption applies? (Select all that apply)

Size of Farm

Use of Structure

History of agricultural activity of the site

Purpose of animals, if present

Percentage of total income from agricultural activities

Filing of an IRS Schedule- F.

Number of hours devoted to agricultural activities by resident landowner

Processing of products grown or not grown on-site.

Sales of products grown or not grown on-site.

Other: _____

Deciding How to Apply the Exemption

17. Which of the following best describes how you learned about the exemption? (Check all that apply)

I learned about the exemption by a producer asking for it to apply to their property.

I learned about it through formal training as a zoning administrator.

I learned about it from other county zoning administrators.

I learned about it by county supervisors telling me how to apply it.

Other: _____

18. Which of the following best describes your efforts to enforce the exemption? (Check one answer)

3 pts The county supervisors have explicitly told me how to apply the agriculture exemption.

3 pts The county supervisors have implicitly influenced how I apply the agriculture exemption.

3 pts The pressure to apply or not apply the agricultural exemption has varied considerably depending on the make up of the county board of supervisors.

2 pts The county supervisors have occasionally asked me questions about particular cases, but have mostly left the interpretation and application of the agricultural exemption to my discretion.

1 pt The county supervisors have always left the interpretation and application of the agricultural exemption to my discretion.

19. In a few sentences describe the interaction between you and the county supervisors regarding the agricultural exemption:

20. To make decisions of how to apply the agriculture exemption in close cases I rely mostly on: (Check one answer)

My interpretation of the exemption.

What the county supervisors have told me of the exemption.

Advice from other county zoning administrators.

Other: _____

21. In your opinion, what actions should be taken to make decisions regarding how to apply the agriculture exemption more clear? (Check all that apply)

The state legislature should update the exemption and include guidance in how to apply it.

Iowa courts should hear more cases regarding the exemption to provide more judicial precedence that can guide decisions.

There should be statewide trainings of how to apply the exemption.

County supervisors should instruct us how to apply the exemption.

Other: _____