PERSPECTIVES OF GRAZING LANDS AGRICULTURE PRODUCERS TOWARD THE CONCEPT OF REGENERATIVE AGRICULTURE: A Q METHODOLOGY STUDY

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Submitted to the Faculty of the
Graduate College of the
Oklahoma State University
in partial fulfillment of
the requirements for
the Degree of
MASTER OF SCIENCE
July, 2022

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Title of Study: PERSPECTIVES OF GRAZING LANDS AGRICULTURE PRODUCERS TOWARD THE CONCEPT OF REGENERATIVE AGRICULTURE: A Q METHODOLOGY STUDY

Major Field: INTERNATIONAL AGRICULTURE

Abstract: The concept of regenerative agriculture has become a popular idea amongst advocates for conservation and many farmers and ranchers wishing to manage their resources in a more holistic manner. This study examines perspectives of grazing lands agriculture producers toward the concept of regenerative agriculture. The recognition of farming/ranching as a combination of social and physical elements draws on the need for more research into the human aspects of agriculture. Q methodology was selected to identify unique perspectives while retaining self-reference from the participants.

The findings of this study identify two unique perceptions about regenerative agriculture and draw out the similarities of a global scale of recognition associated with owning land and managing with specific business and land management goals. Traditional Stewardship Graziers show a confidence in tried-and-true methods of land management and identify the term regenerative agriculture as not a new style of management, yet a throwback to classical methods of grazing management (long term paddock rest, correct disturbance regime, slight to moderate stocking rates, etc.). Flexible Exploratory Graziers have an increased willingness to adopt out-of-the-box management schemes or concepts if said schemes have been shown to positively impact business conditions and or profit.

The findings identify a need for additional research in the area of perceptions relating to agriculture issues. Identifying that land ownership is recognized as a global responsibility by both perceptions expresses a need for deeper research into the perceptions relating to agriculture responsibility and producer wellness associated with land management.

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CHAPTER I

INTRODUCTION

Regenerative agriculture has been purported by many as a land management style or concept with the intent of transforming, revitalizing, or renewing the global food system (Giller et al., 2021). The term, regenerative agriculture (RA), has many definitions and is currently used to fit a specific land management style more than a set list of practices or rules (Giller et al., 2021). These varied definitions have allowed for interpretation in the meaning as well as the parameters for operations utilizing these general regenerative agricultural practices. Generally, definitions in common literature reflect either an outcome-based theme or a process-based theme (Newton et al., 2020). Two central themes of regenerative agriculture are soil health and reversal of biodiversity loss (Giller et al., 2021). The basic premises of regenerative agriculture revolve around enhancement of soil building principles and the management that influences soil health (Newton et al., 2020). Regenerative agriculture has even been claimed to be a concept that will decrease degredated landscapes across the globe (Soto et al., 2020).

As global population increases, demand for natural resources increases and therefore a shift in how agriculture is implemented globally (Brown et al., 2021). The acknowledgement of climate impacts based on agriculture practices has influenced world

organizations to adopt policies and goals to address these issues (United Nations, 2021). With there being no scientifically recognized definition for RA, substitute terminology has been incorporated that fulfills much of the same intent and purpose (Newton et al., 2020). Conservation-based efforts of graziers or grazing lands agriculture producers, have widescale impacts on all who consume, tend, benefit, conserve, and utilize our natural resources. Lack of peer reviewed literature complicates research efforts seeking to clarify regenerative agriculture claims and benefits. Identifying perspectives of agriculture producers could help recognize opportunities for advancement, education, and or research related to the topic of regenerative agriculture.

Statement of the Problem

Terms such as sustainable agriculture, soil health, and conservation agriculture all address many of the same issues found globally in association with restoration or enhancement of natural ecological processes (Newton et al., 2020). Because of these inconsistencies in definitions, there is no clear linkage between agriculture producers and their acceptance, implementation, and application of RA. Lack of contemporary peer reviewed research relating to perceptions of agriculture producers operating grazing systems has limited the understanding of qualitative factors contributing to knowledge of the subject of regenerative agriculture.

Objectives of the Study

The purpose of this study was to explore and identify the perceptions of grazing lands agriculture producers toward the concept of RA

Significance of the Study

This study will contribute to the knowledge of academia, agriculture educators, farmers/ranchers, and natural resource conservation advocates. Better understanding the perceptions of these grazing-lands producers provides a clearer view of why and how some land management decisions are made and what factors might influence RA adoption or dismissal. The conservation of natural resources is a global challenge and is found in many of the United Nations Sustainable Development Goals (United Nations, 2021). Understanding agriculture producers' perceptions will help to discover underlaying factors in adoption of RA not currently known to educators and practitioners.

The people who will benefit the most from this study are the advocates for better conservation of natural resources. Farmers/ranchers, government agencies, state wildlife departments, non-government organizations (NGO's), and conservationists may be better able to tailor program delivery and messaging with a more detailed understanding of various perceptions of agriculture producers.

Terminology

Factor Array: The composite Q sort developed from the correlation of statements representing all individual sorts that define a single factor (Watts & Stenner, 2012).

P Set: The participants of the study (McKeown & Thomas, 2013).

Q Set: A pre-determined set of opinionated statements originating from the concourse development process (Watts & Stenner, 2012).

Q Sort: The positioning or sorting of statements on a record sheet by a participant (Watts & Stenner, 2012).

CHAPTER II

REVIEW OF LITERATURE

The purpose of this study was to explore and identify the perceptions of grazing lands agriculture producers toward the concept of RA. The following literature review is intended to provide an overview of verified scientific research associated with the topic of RA at the time of production of this study. This chapter outlines concepts regarding RA, including general knowledge and terminology, the association of soil health and RA, and perceptions of agriculture producers to RA practices.

General Knowledge and Background of RA

The lack of a standardized definition for the term regenerative agriculture makes it difficult to fully review the literature and assess articles associated with the term (Newton et al., 2020). Schreffel (2020 p.1) states, "In absence of such a scientific definition, a variety of researchers may foster diverging perceptions of RA." The clear lack of a formal definition gives reviewers, researchers, and agriculture producers freedom to interpret and fit the term to meet their needs (Newton et al., 2020).

The origins of the term regenerative agriculture can be traced to Robert Rodale and his establishment of the term *regenerative organic agriculture* in the 1980s (Ikerd, 2021; Rodale, 2022). Common concepts in RA literature relate to environmental restoration, soil health and optimizing natural resource management (Schreefel et al., 2020). This holistic method of agricultural land management [RA] encourages innovation in environmental, economic, and social aspects (Gosnell et al., 2019). The concept of RA is an all-inclusive adaptive approach to land management whereas conservation of soil resources forms the foundation of all practices (Rattan, 2020). Rattan (2020) developed a model of regenerative agriculture's combined processes relating to carbon sequestration from the atmosphere, demonstrating the interconnectedness of popular conservation and land management terminology.

Challenges associated with the definition of RA include the clarity and consistency for researchers, confusion among consumers, and opportunity for the term to become corrupt and loose creditability (Newton et al., 2020). Due to the lack of consistency associated with this terminology, the area of RA and associated connections are poised for further scientific experimentation and data collection (Newton et al., 2020). Additionally, as more Non-Government Organizations (NGOs) use the term RA, it becomes subject to "greenwashing" or titled as a buzzword (Giller et al., 2021).

The terms *sustainability* and *regenerative agriculture* are often used together in conflicting context debating the logic of sustaining a degraded resource versus regenerating a resource, an argument that associates sustainability as inferior to regeneration (Ikerd, 2021; White, 2020). Ikerd (2021, p. 7) explained that "Authentic sustainability is the ability to meet the needs of the present without diminishing

opportunities for the future." The following definition provides a legal framework for United States policy relating to agriculture and natural resource conservation:

> As defined by U.S. Code Title 7, Section 3103, The term 'sustainable agriculture' means an integrated system of plant and animal production practices having a site-specific application that will, over the long-term— (A) satisfy human food and fiber needs; (B) enhance environmental quality and the natural resource base upon which the agriculture economy depends; (C) make the most efficient use of nonrenewable resources and on-farm resources and integrate, where appropriate, natural biological cycles and controls; (D) sustain the economic viability of farm operations; and (E) enhance the quality of life for farmers and society as a whole (United States Government, 2022, p. 1406).

Sustainability of agriculture on a global scale is included in many of the United Nations Sustainable Development Goals (SDGs); for example, #2 Zero Hunger, #6 Clean Water and Sanitation, #12 Responsible Consumption and Production, #13 Climate Action, incorporate agriculture conservation directly (United Nations, 2021). These goals are supported by the United Nations and apply to all representative countries, not just farmers or ranchers (United Nations, 2021).

Conservation Agriculture (CA) is another term that shares similar themes of RA, including minimal mechanical tillage, cropping diversity, and soil cover or cover crops (Lalani et al., 2021). Climate Smart Agriculture (CSA) is yet another term used in association with natural resource conservation. CSA is a term adopted by the Food and

Agriculture Organization (FAO) to broadly cover any policies and internationally accepted goals, such as the SDGs (FAO, 2022). The various definitions and acronyms apply to a broad scale of agriculture across the globe, and all have a connection to conservation of natural resources.

The Relationship of Soil and Soil Health to RA

Regenerative agriculture is based on biological principles and seeks to enhance productivity and environmental capacity at the same time (Sherwood & Uphoff, 2000). Sherwood and Uphoff (2000) proposes that future efforts in agriculture practice and research should focus on increasing the capacity of our agriculture production systems while emphasizing soil health. In an article by Sherwood and Uphoff (2000) relating to the soil health, the authors suggest that long-known regenerative practices for soil health focus on biological aspects (nurturing the soil) as opposed to conventional practices that revolve around mechanical manipulation. The theme of soil and soil health is identified in many research articles relating to RA (Giller et al., 2021; Schreffel, 2020; Sherwood & Uphoff, 2000; and Soto, 2020). "Just like soil quality, soil health is a container concept, which requires disaggregation to be meaningful. While it can be understood as something positive to strive for, underlying soil functions need meaningful indicators which can be measured and monitored over long periods of time" (Giller et al., 2021, p.17). Contemporary research in regenerative agriculture as noted by Schreefel et al. (2020) has identified three main concepts associated with RA relating to soil health: 1. Enhance and improve soil health 2. Optimize resource management 3. Improve water quality and availability. In this detailed review, Schreefel et al. (2020) note that indicators and benchmarks will need to be established to assess RA.

Soil erosion and soil protection (soil conservation) have many advocates in the United States. The United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) focuses its efforts and mission on helping private landowners address natural resource concerns, including soil health and soil erosion (United States Department of Agriculture Natural Resources Conservation Service, 2021). Farmer's knowledge of soil quality relies on local observation of ecosystem changes (Soto et al., 2020). "Combining local and technical indicators is especially relevant to monitor soil quality changes of innovative farming approaches like regenerative agriculture (RA)" (Soto et al., 2020, p.2).

Grazing Related RA Practices

Much debate has been made about the benefits of different grazing schemes and overall best practice to benefit both grazing lands and livestock (Briske et al., 2001). The concept of RA grazing practices often involves the promotion of high intensity short duration grazing schemes (Teague et al. 2013). Utilizing a multi-paddock rotational grazing regime, coupled with high intensity short duration grazing intensities, supports the concepts and ideology of many RA grazing producers (Briske et al., 2001; Savory & Parsons, 1980; Teague et al., 2013). The idea or general plan of implementation for this RA scheme is to adjust stocking rate and densities to match a pre-determined paddock or grazing cell resulting in concentrating livestock trampling and dung followed by long periods of rest, which will then assist in essential soil functions (Morris, 2021; Teague et al., 2013). Studies by Holecheck et al. (1999) and J.Augustine et al. (2020) provide contradictory data to the above mentioned RA grazing studies and translate into a more conservative representation of grazing management.

Briske et al. (2011) highlights the debate of rotational grazing and suggests that focusing on the human dimension will enable the profession [grazing management] to incorporate social and biophysical components into a more complete evaluation. The friction between those who choose conventional grazing systems over those who support regenerative options is clear evidence for a need to re-evaluate the landscape and how farmers/ranchers care for it (Gosnell et al., 2019). Human dynamics relating to land management and grazing go far beyond one component of incorporating rotational grazing and create the need for recognition of far greater and more complex social and ecological issues affecting grazing lands (Briske, et al., 2001). Narrowly focused studies relating to the ecological benefits of one concept over another drive the need to transition into a more communicative and adaptive form where "both experiential and experimental knowledge can most effectively facilitate the learning required to create management strategies that fit specific social and ecological settings and that accommodate the inherent uncertainties of rangeland ecosystems" (Briske, et al., 2001, p. 333).

Other Factors

Economic flexibility through diversification of on-farm activities could favor producers who are open to change and can adapt quickly (Spratt, et al., 2020). The certification of RA systems on farms and ranches is driven by proponents of RA to establish means of certification with higher standards than the USDA organic ratings (Giller et al., 2021).

CHAPTER III

METHODOLOGY

Introduction

The purpose of this study is to explore and identify the perceptions of grazing lands agriculture producers toward the concept of regenerative agriculture. This chapter details the development of this study, materials used to conduct it, and data analysis. Following a brief introduction to Q methodology, a rationale section details the use of Q methodology as the best fit for this study. The P set section describes participant selection and differences in potential P set parameters relating to agriculture producers. A section on instrument development describes this study's concourse, Q set, and materials. Finally, the data analysis section details the process of analyzing Q data.

Q Methodology

Q methodology is an analysis of personal beliefs and opinions captured through scientific protocols (Brown S., 1980). William Stephenson introduced Q methodology in 1935 as an innovative adaptation to factor analysis whereas patterns of association between measured variables are analyzed (Watts & Stenner, 2012). The utilization of Q methodology is intended to garner individual perceptions through their vantage point of self-reference (McKeown & Thomas, 2013). This methodology allows the researcher to

discover subjective first-person viewpoints from participants (Watts & Stenner, 2012). Q methodology is unique in that allows for the capture of ideas or thoughts solely based on that person's perception of the subject matter without external influence (McKeown & Thomas, 2013). Social issues and research topics involving any human opinion are best suited for Q methodology-based research due to its ability to systematically capture qualifiable data (subjective opinions) for quantifiable analysis (McKeown & Thomas, 2013; Watts & Stenner, 2012).

Rationale for Q

Farming, and therefore agriculture, is a complex process of ecological systems relating to the nature of science and biology (Soto et al., 2020). Farming is also a social activity, drawing deep from the dynamic pathways of human connectiveness (Pereira et al., 2016; Halbrendt et al., 2014). The utilization of Q methodology in the field of agriculture can assist researchers in identifying patterns of themes or associations between pre-determined variables associated with the human aspect, as opposed to more traditional agriculture research matrices (Pereira et al., 2016). For this study, Q methodology allows for a focus on the human dimension of agriculture with the intent of identifying unique perceptions toward the concept of RA.

Researchers in various agriculture-related disciplines have used Q methodology in their work, including environmental perspectives (Davies & Hodge, 2012), farmer goals (Brodt et al., 2006), and the future of the European organic vision (Zanoli et al., 2018). A review of literature for this study indicated no specific Q methodology research related to the topic of regenerative agriculture and grazing, or more specifically the perceptions of

United States-based grazing lands agriculture producers. The increasing popularity of the subject (Giller et al., 2021) and positive associations of potential ecological outcomes (Morris, 2021; Teague et al., 2013; Savory & Parsons, 1980) give this topic needed attention and further human-based research.

P set

The participants for this study, known in Q methodology as P set, includes agriculture producers who are producing an agricultural product (food or fiber) from grazing lands in the United States. The parameters were set to include adult graziers utilizing some cropland for grazing as this practice is common for grazing animal agriculture. Regionality was limited to the United States to ensure consistency of agriculture policy and regulation as grazing managers in other countries may be impacted by different regulations. The final P set for this study includes grazing lands agricultural producers, 18 years of age or older, operating within the United States. This study was granted Oklahoma State University IRB approval on December 17, 2021 (Appendix A).

Reflexivity

Reflexivity in qualitative research relates to the ability of the researcher to contribute personally to the results or data based on his/her own experience or opinion (Abrica, 2018). A simple reflection or recognition of one's own experiences and thoughts documented throughout the research process can be an example of reflexivity. According to this view, reflexive researchers are those who question their own assumptions, the interests served by their research, the ramifications of their findings and the ethical foundations of their practice (Gabriel, 2015).

My experience in the field of conservation has allowed me to gain knowledge about producer insights and a reference context to local land management style and popular agriculture practices within the Southern Great Plains. This detailed experience has enabled me to include personal and professional references from my current locale and grazing manager connections into the foundation and concourse development of this experiment.

Currently, I work for USDA Natural Resources Conservation Service as a Resource Conservationist. My duties include working with private landowners to identify resource concerns and help them formulate a plan to address said issues. I have operated in this capacity for nine years, and my time spent in multiple counties across the State has afforded me the opportunity to build a very comprehensive base of opinions on regenerative agriculture (RA) from producers in this region. My passion for this issue is what has spurned this research idea and is also what makes it interesting to me.

Instrument Development

Materials used in this Q methodology study include a list of opinion-based statements, known as a Q set, a record sheet, and demographics questionnaire. Details of those materials are described in this section.

Concourse

The collection of statements relating to the subject matter is referred to as the concourse (Brown S., 1993). A concourse includes various opinionated statements or other items and are formed from shared understandings unique to individuals (Watts &

Stenner, 2012). The ambiguity and subjective nature of human communication leads to a diverse and imprecise collection of opinions about a subject (Watts & Stenner, 2012).

The concourse for this study was drawn from contemporary peer-reviewed literature, professional and personal experience with grazing lands agriculture producers, and informal conversations with other conservationists. Most statements identified in the development of this concourse stem from a naturalistic approach, meaning statements were drawn from the collection of opinions and personal interactions with persons related to the field of study (Watts & Stenner, 2012). Ideas, producer discussions, stories told by local graziers over the course of the researcher's experiences working in this industry were all utilized in the formation of this concourse. Other statements stemmed from literature. For example, "My wellbeing stems from knowing I am managing my land regeneratively," stemmed from a study by Brown et al. (2021) regarding subjective wellbeing measures as indicators of sustainable farming systems utilized by regenerative farmers. The statement, "I don't want to commit to something that I cannot define" stemmed from a study by Newton et al. (2020) regarding definitions of regenerative agriculture. "To be honest, I manage this land for the tax benefit" is an opinionated statement inspired by Ikerd (2021) relating to the comparison of "industrial" farming to regenerative farming approaches. The statement, "Soil health and RA are the same thing" derived from Sherwood (2000)'s study on regenerative agriculture systems relating to soil health. The concourse of 112 opinion-based statements for this study was then categorized according to the likeness of the statements, following Brown's (1980) principle of homogeneity. The statements were categorized according to training, research, market, family/heritage/tradition, and active land management.

Q set

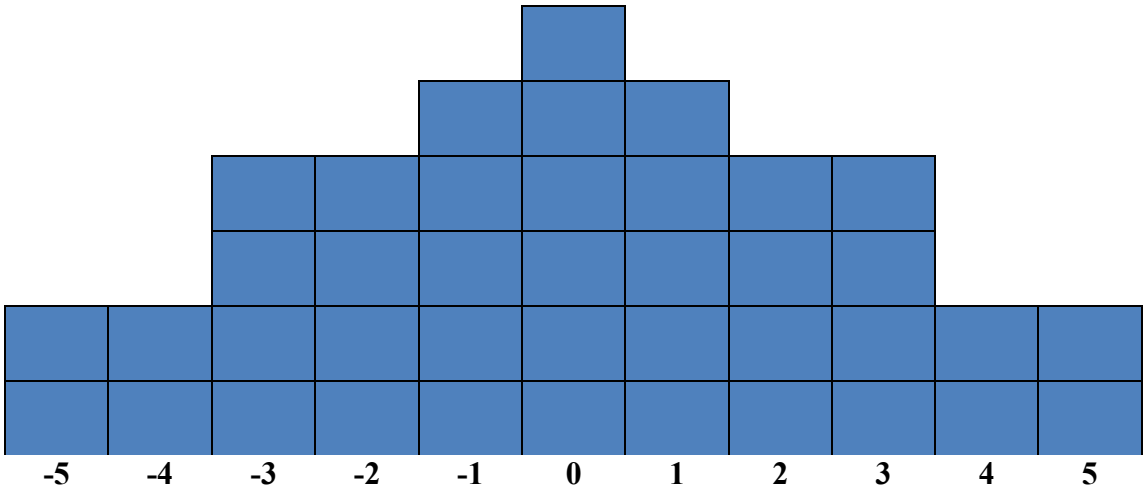
Once the concourse was grouped into the five homogeneous categories I then reviewed each to ensure the greatest differences of statements within each category following Brown's (1980) principle of heterogeneity. The resulting list of 40 statements (Appendix C) served as the Q set for this study. In Q methodology, a Q set or Q sample is a list of heterogenous statements gathered through concourse development that the participants sort on a record sheet (Watts S. S., 2005). The Q set for this experiment was drawn from statements identified through concourse development as detailed in the previous section of this manuscript. From the original concourse, generalizations and areas of interest were formed for each statement. After revision and re-wording, 40 statements were selected to cover the aspects of the subject matter relating to training, research, market, family/heritage/tradition, and active land management. These categories help to organize statements into manageable groups to ensure depth and variety of the final Q set. For example, the statement, "RA is the newest buzzword. There will be another one in a couple of years," was included in the Research category and stemmed from informal conversations with several agricultural producers. The grouping into the Research category was facilitated by recognizing the statement and information gained from the field associated with information identified in literature, in this case, Newton (2020). Each statement was printed on a paper card in the exact dimensions of the spaces designed on the participant record sheet. All 40 statements printed on cards were packaged into plastic sealable bags to be included in a manila envelope packet containing the statement cards, record sheet, participant information sheet, optional demographic sheet to be mailed to participants.

Record Sheet

An 11-column (-5 to +5) record sheet was used for participants to sort and record their responses (Brown, 1980). The pre-arrangement and design or distribution of the record sheet is identified as a forced-choice frequency distribution from Most Like +5 to Most Unlike -5 (Watts & Stenner, 2005). An example of the record sheet used in this study is provided in Figure 1.

Figure 1. Record Sheet

What are your thoughts about Regenerative Agriculture?



Condition of Instruction

Printed at the top of the record sheet was the study's Condition of Instruction**.** The condition of instruction selected for this Q study was: What are your thoughts about

regenerative agriculture? Q sorting is a process in which participants sort Q set based on self-reference and determined by the condition of instruction (McKeown & Thomas, 2013). The condition of instruction is usually a phrase or question based on the sample material and subject matter. Conditions of instruction are unique to each individual Q sort experiment and serve as a guide to participants as they complete the Q sort (McKeown & Thomas, 2013).

Demographics

An optional demographic questionnaire, (Appendix B), was developed to capture additional data relating to the P set. Common data such as age, gender, and education level were included along with more descriptive questions relating to type of grazing operation, kinds of grazing animals, familiarity with regenerative agriculture, and state or locality. Participants were also asked the question, "What else would you like to say about the statements you sorted?" and given space to freely express their thoughts about the sort. Demographic data were requested to identify potential relationships and or show commonality or uniqueness between groups or types of sorters, not individual sorters.

Data Collection

Data collection occurred over the duration of two months. Participants were recruited via email initiated by soliciting contacts known to the researcher and providing them with information related to the study and the researcher's contact information. Advertisement and promotion of this experiment was initiated on January 4, 2022. Participation was also solicited based on the snowball method in which initial contacts

were asked to send the request to any additional parties they deemed relevant to the study. Participants interested in the study contacted me directly via email to verify their intent of proceeding. Once communication was established via email, participants were asked to provide a valid mailing address so research material could then be mailed directly to them. Participants who did in-person sorts were provided the same research materials as those who sorted remotely.

Once participants received the research materials, a date was agreed upon to conduct the Q sort. Participants chose whether they preferred to complete the sort in-person or remotely via online video conferencing. Following Watts and Stenner (2005) protocols, participants were instructed to read each of the 40 statements and sort them into three separate piles based on the condition of instruction: What are your thoughts about regenerative agriculture? Participants were asked to sort the statements most like their thoughts in the right-hand pile. The left-hand pile was for statements most dislike their thoughts, and a middle pile represented the statements they did not have strong feelings about. Once all statements were categorized in the three piles, participants were asked to find the two statements from the right-hand pile that they had the strongest feelings about and align them on the record sheet in the +5 column. Participants found the two statements from the left-hand pile that were most unlike their thoughts regarding the statement of instruction and placed them in the -5 column on the record sheet. The sorters continued to alternate between the two piles and fill in the record sheet working from the outer edges into the middle until no more most like or most unlike statements remained. At this point, sorters would choose statements from the middle pile to fill in the remaining record sheet blanks still in an alternating pattern from most like to most

unlike. Once initial sorting was complete, participants were given time to review their answers and move any pieces they felt did not fit. When participants were done sorting, they recorded the statement number in the corresponding box on the record sheet. Participants were asked to complete a demographic sheet. Field notes were scribed to record any post-sort information that was deemed relevant to the topic and or any conversation that stemmed from the process of sorting. Participants who sorted remotely captured images of their completed record sheet and demographic sheet and emailed them to me.

DATA ANALYSIS

Data analysis for Q methodology begins with entering individual Q sorts into a data analysis software program. The sorts are correlated to each other, and the resulting correlation matrix is factor analyzed. Factor scores for each statement within each resulting factor are arranged via z-score, resulting in a composite factor array (McKeown & Thomas, 2013). That array, plus demographics, post-sort interviews, and field notes are used to interpret the findings. The process of factor interpretation is adherently abductive in that clues and nuances shown in the factor array form the foundation for viewpoints (Watts & Stenner, 2012).

CHAPTER IV

FINDINGS

This chapter introduces the findings identified through this study and discuss the parameters used for data analysis. The purpose of this study was to explore and identify the perceptions of grazing lands agriculture producers toward the concept of RA. The findings section details the conceptual themes and statements justifying those conceptual themes per each factor. Participant information and demographic data is also included in this chapter.

Participants

A total of 17 sorts were captured with seven sorts completed in-person and 10 conducted remotely online. Participant locations were as follows: Texas, 1; Kansas, 1; Nebraska, 2; and Oklahoma, 13. Ages of participants range from 24 to 71 years old. Demographic questioning indicated participants' knowledge of regenerative agriculture varied. Seven participants indicated they had taken formal classes/trainings or consulted with someone about RA, while nine participants indicated they had a basic knowledge of RA. One participant indicated they were not familiar with RA.

Data Analysis

"The analysis of Q sort data consists of intercorrelating the number of Q sorts as variables and factor analyzing the correlation matrix" (McKeown & Thomas, 2013, p. 6). Data for this study were analyzed using PQ Method software (Schmolck, 2014). With a significance level of 0.44, a two-factor solution was retained. Statistical significance was calculated with the following formula: 2.58(SE), in which SE = $\frac{1}{\sqrt{N}}$ with N as the number of items in the Q set (McKeown & Thomas, 2013). For this study, SE = $\frac{1}{\sqrt{40}} = 0.158$. 2.58(0.158) = 0.40 Statistical significance for this experiment was adjusted to 0.44 to help establish two distinct factors within the data.

The two factors interpreted for this study included 10 sorts defining factor 1 and five sorts defining factor 2. One sort was identified as not statistically significant and one sort was confounded, reaching significance on at least two factors. Factor arrays, or the arrangement of statements by *z*-score calculation for each factor, are included in Appendix C. Table 1 shows the individual factor loadings for each sort number.

Table 1

Factor Matrix

Sort Number	Factor 1	Factor 2
13	**0.72**	0.13
5	**0.71**	0.13
9	**0.71**	0.05
16	**0.69**	0.39
17	**0.66**	0.24

11	**0.64**	0.36	
2	**0.64**	0.23	
1	**0.57**	0.26	
19	**- 0.500**	0.08	
18	**0.49**	0.34	
4	0.43	**0.64**	
7	0.28	**0.64**	
8	0.11	**0.72**	
3	0.10	**0.82**	
10	0.004	**0.82**	
6	0.66	0.51	Confounded
15	0.11	0.32	Non-significant

Interpretation

The two factors identified in this study were labeled according to conceptual themes identified in each. Interpretation data for the factors included factor arrays, demographic information, post-sort interviews with exemplar sorters, and field notes. Exemplar sorters are those participants who show a high correlation with a specific factor Six interviews were conducted with sorters of this study who were most closely aligned with their respective factor, three represented for each factor. Factor Array 1 was named the Flexible Exploratory Graziers as sorters who defined this factor indicated a positive position to adaptation of new concepts/ideas, individual legacy management styles, and comfort in knowing they are managing their land and animals for a bigger purpose. Factor Array 2 was named the Traditional Stewardship Graziers for their focused approach to financial business, confidence in their own land (and business) management decisions, and a healthy skepticism of new or unvetted ideas/concepts.

Table 2

Distinguishing Statements for Factor 1

Statement Number	Statement	Factor 1 array position	Z Score	Factor 2 array position	Z Score
25.	I have a commitment to carry on this legacy of management	4	1.35	1	0.46
22.	My wellbeing stems from knowing I am managing my land regeneratively	3	1.32	-2	-0.55
12.	The way my ranch looks is really important; No weeds, groomed	3	0.94	-2	-0.62

	pastures, and straight fences				
3.	I feed my grazing animals extra because it makes me happy to have healthy animals.	3	0.79	-4	-1.44
15.	My version of RA is simply good range management. It is what I have been doing for years.	3	0.76	5	1.71
17.	I like my neighbors, but just because they have success with something doesn't mean that I am going to switch	2	0.75	-1	-0.21
18.	Grazing lands producers have the most to gain with RA	1	0.56	0	-0.14
27.	Farming/Ranching is a lifestyle. I don't really care if I make lots of money.	1	0.50	-5	-1.77
37.	RA is the newest buzzword. There will be another one in a couple of years.	1	0.27	3	1.50
9.	RA is too slow. I need to see benefits now, not in 15 years.	1	0.25	-3	-1.14
7.	The Gov. should do more to fund RA on grazing lands.	0	0.17	-3	-0.95
34.	I do not want to commit to something that I cannot define.	-1	-0.20	3	1.00
6.	RA is for these new-age grazers, I'll stick with slight to moderate and take half leave half management	-2	-0.90	2	0.70

4.	RA is just another version of that hippie organic movement.	-2	-1.08	0	-0.19
38.	Photosynthesis, nutrient cycling, energy cycling are for college kids.	-3	-1.15	-5	-2.30
35.	Not every soil type can or needs to be regenerated.	-3	-1.18	2	0.62
19.	My grandpa would roll over in his grave if I were to undo all the management	-4	-1.18	-1	-0.35
30.	To be honest, I manage this land for the tax benefit.	-5	-1.65	-1	-0.36
5.	When someone tells me I need to do RA, I am offended	-5	-1.66	0	-0.05

Factor Array 1: Flexible Exploratory Graziers

Factor 1 was defined by 10 sorters, including three females ranging in age from 28 to 57 years, and seven males ranging in age from 24 to 71 years. The following statements are the "Most Like" and "Most Unlike" statements compiled from the composite sort for Factor Array 1. These statements represent the two columns on either side of the record sheet. +5 and +4 for those most like their thoughts about regenerative agriculture, and -5 and -4 for those most unlike these participants' thoughts about regenerative agriculture.

Table 3

Most like and Most Unlike Statements for Flexible Exploratory Graziers

Statement Number	Statement	Array Position
	Most Like Statements	
13	My operation is not run willy-nilly. A good management plan includes business goals and conservation goals.	+5
11	Owning land means you have a responsibility to the Earth.	+5
23	The land management on this ranch is our family's legacy.	+4
25	I have a commitment to carry on this legacy of management.	+4
	Most Unlike Statements	
30	To be honest, I manage this land for the tax benefit.	-5
5	When someone tells me I need to do RA, I am offended. My place does not need to be regenerated.	-5
19	My grandpa would roll over in his grave if I were to undo all the management he started on this operation.	-4
33	RA is a liberal US policy to control American ranchers. .	-4

The Flexible Exploratory Graziers are defined by three conceptual themes: Legacy/Adaptation, Financial Importance, and Sense of Wellbeing/Satisfaction.

Legacy/ Adaptation

The Flexible Exploratory Graziers note a higher tendency toward adaption and change. Flexible Exploratory Graziers have a willingness to try outside-the-box methods or management practices. The management of past generations is not as important as the current management style or land management techniques. Flexible Exploratory Graziers

identify legacy with their own current management practices and/or style as compared to long multi-generational lineages of management styles. The idea of initiating a change relating to new concepts or ideas suits this category of grazer. For example, in a post-sort interview, Sorter 1 said, "Adaptation is just what we do. We are constantly changing our grazing system to match forage production. … We change [grazing schemes] whenever we feel like it is best for the animals." The concept of adaptation and change influences this groups' overall management and is manifested as dedicated planning in both business goals and management goals. The following statements support the legacy/adaptation concept:

Statement Number	Statement	Array Position
Legacy/Adaptation		
23	The land management on this ranch is our family's legacy.	+4
25	I have a commitment to carry on this legacy of management.	+4
13	My operation is not run willy-nilly. A good management plan includes business goals and conservation goals.	+5
30	To be honest, I manage this land for the tax benefit.	-5
5	When someone tells me I need to do RA, I am offended. My place does not need to be regenerated.	-5
19	My grandpa would roll over in his grave if I were to undo all the management he started on this operation.	-4
16	I have years of land management experience; I don't need to change what I am doing for the sake of the planet.	-2

31	I only need to adapt my management to what is happening now, that is how the agriculture business works.	-2

Financial Importance

Flexible Exploratory Graziers manage their operations with intent to make money. Financial records, farm record keeping, and careful attention to similar business records can impact traceability of profit or losses. Even with the idea of management changes, business matters are important to the Flexible Exploratory Graziers. These operations are viewed by members as a business, rather than hobbies or part-time commitments. Sorter 5 said in a post-sort interview, "I spend a lot of time working on the financials. It takes time to keep good records." This indicates that tracking business matters accounts for a significant amount of time away from typical land management duties. Sorter 2 said, "FSA limitations on tract and field ownership influence our management of certain fields. Dad has that field, and I have this one, and we can't remove the fence to make one big field without major changes to our farm records and programs." Government financial incentives and or programs may restrict management ideas and therefore limit acceptance or participation in these familiar programs. Government involvement or constraints of financial contracts may not mesh with their style of management or allow the flexibility needed to match their goals. The following statements support the concept of financial importance.

Statement Number	Statement	Array Position
Financial Importance		
13	My operation is not run willy-nilly. A good management plan	+5

	includes business goals and conservation goals.	
20	This operation is a family business, not an inheritance opportunity.	+2
18	Grazing lands producers have the most to gain with RA.	+1
7	The government should do more to fund RA on grazing lands if they want us to change our management.	0
27	Farming/ranching is a lifestyle, I don't really care if I make lots of money.	+1

Sense of Wellbeing/ Satisfaction

The Flexible Exploratory Graziers have deep ties to producing a product and/or managing according to their own definition and understanding of regenerative agriculture. Recognizing that the impacts their operation has on not just local or regional environmental issues, reflects a more holistic view of how and why they choose to operate the way they do. The way these producers manage land contributes to their sense of wellbeing. Flexible Exploratory Graziers recognize their land management impact on a greater scale than just their own ranch or farm. In context of the impact grazing agriculture has on ecological systems, recognition of the interaction between land management of a singular ranch or farm and the Earth is important to Flexible Exploratory Graziers. The following statements support the concept of a sense of wellbeing/satisfaction:

Statement Number	Statement	Array Position
Sense of Wellbeing / Satisfaction		
11	Owning land means you have a responsibility to the Earth.	+5
22	My wellbeing stems from knowing I am managing my land regeneratively.	+3
12	The way my ranch looks is really important, no weeds, groomed pastures, and straight fences.	+3
3	I feed my grazing animals extra because it makes me happy to have healthy animals.	+3
4	RA is just another version of that hippie organic movement.	-2

Of note, this factor is considered a bipolar factor due to one defining sort's negative loading. This sort may be interpreted through a mirror-image of the factor's composite array (Watts & Stenner, 2012). Essentially, a mirror image of this perspective indicates a reluctance to adapt new land management practices, especially those that may reflect long-standing family land management traditions. Additionally, this perspective may view the concept of regenerative agriculture as more politically motivated.

Factor Array 2, Traditional Stewardship Graziers

This factor is comprised of five sorters, all males, ranging in age from 25 to 53 years with one participant who did not provide an age. The following statements are the "Most Like" and "Most Unlike" statements compiled from the composite sort for Factor Array 1. These statements represent the two columns on either side of the record sheet:

+5 and +4 for most like their thoughts about regenerative agriculture, and -5 and -4 for most unlike these participants' thoughts about regenerative agriculture.

Table 4

Most like and Most Unlike Statements for Traditional Stewardship Graziers

Statement Number	Statement	Array Position
	Most Like Statements	
13	My operation is not run willy-nilly. A good management plan includes business goals and conservation goals.	+5
15	My version of RA is simply good range management, it is what I have been doing for years.	+5
11	Owning land means you have a responsibility to the Earth.	+4
23	The land management on this ranch is our family's legacy.	+4
	Most Unlike Statements	
27	Farming/ranching is a lifestyle, I don't really care if I make lots of money.	-5
38	Photosynthesis, nutrient cycling, energy cycling are for college kids. It's simple, "Cows eat grass and weeds are bad", are two of the most important land management principles.	-5
26	God made this land the way it is and it's not up to me to make into something else.	-4
3	I feed my grazing animals extra because it makes me happy to have healthy animals.	-4

Traditional Stewardship Graziers are defined by three conceptual themes: Confidence, Business Commitment, and Skepticism/ Hesitancy.

Confidence

The Traditional Stewardship Graziers have a strong sense of confidence in their knowledge relating to land management and financial aspects of their operation. The "most like" statements for this group form a foundation of confidence. Traditional Stewardship Graziers are confident their management or the legacy management of their operation is based on grounded knowledge of science and ecology. For example: The relationship between statements 15 and 38 show a strong observance of the natural process (environmental processes such as photosynthesis, nutrient cycling, and energy cycling) as critical to management (land management as noted in statement 15).

Traditional Stewardship Graziers do not need certification or confirmation from anyone else to know that their land management is correct. The classic grazing management practice of take-half, leave-half by utilizing a slight to moderate stocking rate are core principles that are found with Traditional Stewardship Graziers. In additional information provided through the demographic sheet, Sorter 8 wrote, "The more flexibility producers have in their management schemes (take half/leave half) the better off they will be when encountering unplanned environmental catastrophes, i.e., drought, wildfire, animal health, etc." This sorter also wrote, "I think that RA has the potential to really limit a producer's management practices on their property while in turn putting them at a higher risk of more negative impacts following said catastrophes. This is accomplished through SDG [Short Duration Grazing] or High AUD [Animal Unit

Density] grazing strategies". Statements that support the concept of confidence for this group are listed below:

Statement Number	Statement	Array Position
Confidence		
40	I do not need certification or confirmation from someone else to know if I am managing my land correctly.	+3
15	My version of RA is simply good range management, it is what I have been doing for years.	+5
39	I really just need advice on best management practices; don't try to sell me on some philosophy of land management.	+2
13	My operation is not run willy-nilly. A good management plan includes business goals and conservation goals.	+5
38	Photosynthesis, nutrient cycling, energy cycling are for college kids. It's simple, "Cows eat grass and weeds are bad", are two of the most important land management principles.	-5
6	RA is for these new-age grazers, I'll stick with slight-to-moderate stocking rate and take-half-leave-half management.	+2
26	God made this land the way it is and it's not up to me to make into something else.	-4

Business Commitment

The theme of Business Commitment is defined by Traditional Stewardship Graziers in their recognition of a division of the farming/ranching lifestyle vs. business.

Owning a farm or ranch does not automatically represent a business venture. The farming and or ranch work is done not has hobby but as a goal of the business. Placement of business aspects above generational progression through inheritance indicate that this style of grazer is strong in family commitment to ensuring the operation runs like a business and not a hobby. Grazing animals are seen as tools for management and business as opposed to pets. In a post-sort interview, Sorter 7 said, "Profit is always something that gets people's attention, it is an important connection for grazers thinking about RA." Traditional Stewardship Graziers have both a business plan and a plan to address conservation goals and objectives. Profit and the ability of the land / grazing operation to make money is a key component in operating style for these graziers. The statements below support this theme.

Statement Number	Statement	Array Position
Business Commitment		
13	My operation is not run willy-nilly. A good management plan includes business goals and conservation goals.	+5
20	This operation is a family business, not an inheritance opportunity.	+3
27	Farming/ranching is a lifestyle; I don't really care if I make lots of money.	-5
21	My grazing animals are like pets, not tools.	-3
28	Butterflies and flowers are important, but not as important as money in my pocket.	+1

Skepticism

Recognition of RA as a buzzword shows that this group of graziers has some hesitancy in adopting RA as a vetted long-term management style. The overall view that RA, in their opinion, is good range management, reflects this group's skepticism of the term RA. As Sorter 4 said, "I can see there are two sides to this issue. RA will work for some producers and not others". The idea that adoption, and, therefore, a land management change associated with current RA practices does not add to the wellbeing of this group of graziers and is further supported by the strong negative positioning of statement 22.

Traditional Stewardship Graziers are confident in tried-and-true methods of land management and see a correlation between the message that RA is a "new" form of management vs. their opinion of regeneration/stewardship through traditional management styles. The following statements support this concept:

Statement Number	Statement	Array Position
Skepticism / Hesitancy		
15	My version of RA is simply good range management, it is what I have been doing for years.	+5
10	I have been doing RA forever, it is just now becoming popular!	+2
6	RA is for these new-age grazers, I'll stick with slight-to-moderate stocking rate and take-half-leave-half management.	+2
37	RA is the newest buzzword, there will be another one in a couple of years.	+3
40	I do not need certification or confirmation from someone else to know if I am managing my operation correctly.	+3

22	My wellbeing stems from knowing I am managing my land regeneratively.	-2

CHAPTER V

CONCLUSION

The purpose of this study was to explore and identify perspectives about regenerative agriculture from grazing lands producers. The following chapter addresses the summary of findings, discussion, and conclusions of this study.

Summary

This study identified two perspectives of RA from the viewpoint of grazing land agriculture producers: the Flexible Exploratory Graziers and the Traditional Stewardship Graziers. Both perspectives show a strong connection to family and business matters associated with their grazing operation. The biggest relationship between the two perspectives is each group identified the act of owning land represents a responsibility to the Earth. Statement 11, "Owning land means you have a responsibility to the Earth" and statement 13, "My operation is not run willy-nilly. A good management plan includes business goals and conservation goals" gives clear recognition to the similarities of these two unique perspectives. The idea that land ownership, and, therefore, land management with grazing has global impacts shows the scale of responsibility identified by these two perspectives.

Conclusions

There are multiple perceptions regarding RA, and this study has identified two. The two perspectives align with known similarities presented in popular literature about the perceptions of RA, specifically the dynamic debate between conventional and regenerative grazing practices (Holechek et al., 1999; J.Augustine, et al., 2020; Teague et al., 2013). This study can also conclude that among both perceptions, the concept of global scale of land ownership, and, therefore, land management implications on a global scale, is a primary shared theme.

Discussion

The ability of farmers and ranchers across all disciplines of agriculture to contribute to a positive measurable environmental outcome is undoubtedly true. To say that one concept of land management i.e., RA, will be the transition to a paradigm shift in how all farmers and ranchers view their operations and manage their farm and or ranch is lacking recognition of all other external factors (political, social, cultural, etc.) impacting agriculture operations. Agriculture producer perceptions about the terms and concepts of land management schemes are important for the recognition of local and regional context in which many other factors apply (Gosnell, Gill, & Voyer, 2019).

The two unique perspectives identified by the study are just small representations of the multitude of potential themes and personas associated with farmers/ranchers and the concepts of RA. Based on agriculture producers who represent the Flexible Exploratory Grazer category, the unique perspective of willingness to try and explore new concepts will prove to be an important characteristic in the promotion and adoption

of new trends in grazing agriculture. This category of producer identified strongly with adaptation to change and showed that through management decisions their willingness to accept outside suggestions contributes to their adaptability. Flexible Exploratory Graziers have a strong sense for business and managing their operation to produce profit could influence their theme of adaption. Opportunities for additional financial resources (certifications, niche markets, etc.) have been promoted by proponents of RA as means of influence to facilitate change or to show potential additional financial opportunities tied to RA (Spratt, et al., 2020). This type of grazer may be more willing to adopt RA supported grazing schemes (multi-paddock, multi-species, short duration high intensity, etc.) as a means of income due to their propensity for both change and income. Similarly, Traditional Stewardship Graziers also represent a strong financial/business theme and manage specifically for business goals and conservation goals. They may not be as willing to induce a land management change without careful consideration of how the two goal categories will be affected.

The theme of wellbeing associated with the Flexible Exploratory Graziers also aligns with other RA research findings, such as Pereira (2016) and Brown (2021). As found in this study, both categories of graziers associate highly with the idea of responsibility and management for a greater cause. The overall findings are not sufficient to claim Flexible Adaptive Graziers and Traditional Stewardship Graziers manage *specifically* for the sense of wellbeing and commitment to a sense of global unity but are sufficient to show a direct tie to grazing lands producers and their sense of responsibility as stewards of the land locally and globally.

Traditional Stewardship Graziers have deep ties to traditional grazing schemes and recognize that their style of management, although not in line with the contemporary definitions of RA, is a viewpoint specifically original to this theme of management and conservation of resources as being regenerative and stewardship based (Giller et al., 2021; Newton et al., 2020). The dynamics of many grazing operations do not fit the grazing schemes associated with popular RA practices. This is reflective of literature reviewed and the positions about RA grazing practices identified in Teague (2013) Holecheck (1999), and Briske (2001). As identified by the Traditional Stewardship Graziers, confidence in their own management ability and recognition of science-based facts drive both business and land management goals.

Implications

The continual strain on natural resources and the popularity of climate-based initiatives will retain the topic of natural resource stewardship as a priority for farmers and ranchers, government entities, and NGOs. This study helps to identify the need for additional Q Methodology-based research relating to the specifics of RA practices and additional P sets. The similarities between the two perceptions highlight a need for more research associated with motivating factors affecting farmers and ranchers. The recognition of a global implication context from these grazing lands producers may show a stronger tie to other motivating factors relating to land management and the adoption of land management practices.

Tighter or more restrictive P sets relating to grazing land agriculture producers may yield stronger regional or topic-based opinions and should be considered for future potential Q research.

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APPENDICES

APPENDIX A

Oklahoma State University Institutional Review Board

Date:	12/17/2021
Application Number:	IRB-21-540
Proposal Title:	The Perceptions of Grazing Lands Producers on the Concept of Regenerative Agriculture (RA)
Principal Investigator:	Travis Jones
Co-Investigator(s):	
Faculty Adviser:	Angel Riggs
Project Coordinator:	
Research Assistant(s):	
Processed as:	Exempt
Exempt Category:	

Status Recommended by Reviewer(s): Approved

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in 45CFR46.

This study meets criteria in the Revised Common Rule, as well as, one or more of the circumstances for which continuing review is not required. As Principal Investigator of this research, you will be required to submit a status report to the IRB triennially.

The final versions of any recruitment, consent and assent documents bearing the IRB approval stamp are available for download from IRBManager. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be approved by the IRB. Protocol modifications requiring approval may include changes to the title, PI, adviser, other research personnel, funding status or sponsor, subject population composition or size, recruitment, inclusion/exclusion criteria, research site, research procedures and consent/assent process or forms.
2. Submit a request for continuation if the study extends beyond the approval period. This continuation must receive IRB review and approval before the research can continue.
3. Report any unanticipated and/or adverse events to the IRB Office promptly.
4. Notify the IRB office when your research project is complete or when you are no longer affiliated with Oklahoma State University.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact the IRB Office at 405-744-3377 or irb@okstate.edu.

Sincerely,
Oklahoma State University IRB

APPENDIX B

Optional Demographic Questionnaire

1. Rate yourself on your current knowledge of Regenerative Agriculture (RA). Select only one.
   1._____ (I have taken formal classes/trainings or consulted with someone about RA)
   2._____ (I have a basic knowledge of RA)
   3._____ (I am not familiar with RA)

2. What is your Gender? _____
3. What is your Age?_____

4. Please check the item that best describes your ethnicity. Check all that apply.
   _____African American _____Asian American
   _____Hispanic/Latino(a) _____American Indian
   _____White _____Other, please specify: _____

5. What is your highest level of education?
   ___ High School
   ___ Associate Major: _____
   ___ Bachelor Major: _____
   ___ Master Major: _____
   ___ Doctorate Major: _____

6. What is your primary occupation? _____

7. What is the primary land type that your own or manage? Select One
   1._____Cropland (primarily used for producing annual crops such as wheat or soybeans).
   2._____Pastureland (Introduced grasses that are managed for livestock grazing or hay production).
   3._____Native Rangeland (Native grasses and or trees managed for livestock grazing and or wildlife).
   4._____None of the above apply. Please explain_____

8. What type of grazing operation do you have? _____

9. What type of grazing animals do you use in your operation?
   _____
10. How many acres is your grazing operation?
    _____
11. Which State is your operation located?_____

What else would you like to say about the ideas on the statements you sorted? Use the back of this page if more space is needed. A follow-up phone interview may be conducted to clarify results.

If you would be willing to participate in a phone interview, please write your first name (or a code name that you will know) and a telephone number at which you can be reached.(CODE) NAME _____ PHONE _____

APPENDIX C

Composite Factor Array

Number	Statement	Factor 1 Z Score	Factor 1 Array Position	Factor 2 Z Score	Factor 2 Array Position
1	1.We don't want to be labeled as "Environmentalists", so I'm not changing.	-0.55	-1	0.84	-2
2	2. Diversifying with different types of livestock sounds like extra work.	-0.06	0	0.20	1
3	3. I feed my grazing animals extra because it makes me happy to have healthy animals.	0.79	3	-1.44	-4
4	4. RA is just another version of that hippie organic movement.	-1.08	-2	-0.19	0
5	5. When someone tells me I need to do RA, I am offended. My place does not need to be regenerated.	-1.66	-5	0.05	0
6	6. RA is for these new-age graziers, I'll stick with slight-to-moderate stocking rate and take-half-leave-half management.	-0.90	-2	0.70	2
7	7. The government should do more to fund RA on grazing lands if they want us to change our management.	0.17	0	-0.95	-3
8	8. I like managing my animals without a set rotation and schedule.	-0.13	-1	0.07	0

9	9. RA is too slow, I need to see benefits now, not in 15 years.	0.25	1	-1.14	-3
10	10. I have been doing RA forever, it is just now becoming popular!	0.07	0	0.57	2
11	11. Owning land means you have a responsibility to the Earth.	2.04	5	1.67	4
12	12. The way my ranch looks is really important, no weeds, groomed pastures, and straight fences.	0.94	3	-0.62	-2
13	13. My operation is not run willy-nilly. A good management plan includes business goals and conservation goals.	2.36	5	1.76	5
14	14. I'm not lazy, I just want to do as little work as possible and still make money with these livestock.	0.21	0	-0.05	0
15	15. My version of RA is simply good range management, it is what I have been doing for years.	0.76	3	1.71	5
16	16. I have years of land management experience, I don't need to change what I am doing for the sake of the planet.	-1.06	-2	-0.53	-1
17	17. I like my neighbors, but just because they have success with something different doesn't mean that I am going to switch.	0.75	2	-0.21	-1
18	18. Grazing lands producers have the most to gain with RA.	0.56	1	0.14	0
19	19. My grandpa would roll over in his grave if I were to undo all the management he started on this operation.	-1.18	-4	0.35	-1
20	20. This operation is a family business, not an inheritance opportunity.	0.72	2	0.97	3

21	21. My grazing animals are like pets, not tools.	-1.10	-3	1.13	-3
22	22. My wellbeing stems from knowing I am managing my land regeneratively.	1.32	3	-0.55	-2
23	23. The land management on this ranch is our family's legacy.	1.46	4	1.52	4
24	24. My family and I have been good land managers for a long time, we have never had to "regenerate" anything.	-0.47	-1	0.14	0
25	25. I have a commitment to carry on this legacy of management.	1.35	4	0.46	1
26	26. God made this land the way it is and it’s not up to me to make into something else.	-1.13	-3	1.38	-4
27	27. Farming/ranching is a lifestyle, I don't really care if I make lots of money.	0.50	1	1.77	-5
28	28. Butterflies and flowers are important, but not as important as money in my pocket.	0.18	0	0.22	1
29	29. A certification of good conservation would improve opportunities for market growth.	0.01	0	0.16	1
30	30. To be honest, I manage this land for the tax benefit.	-1.65	-5	-0.36	-1
31	31. I only need to adapt my management to what is happening now, that is how the cattle business works.	-0.95	-2	0.28	-1
32	32. RA is a step toward globalization.	-0.53	-1	-0.96	-3
33	33. RA is a liberal US policy to control American ranchers.	-1.33	-4	0.70	-2
34	34. I don’t want to commit to something that I cannot define.	-0.20	-1	1.00	-3

35	35. Not every soil type can or needs to be regenerated.	-1.18	-3	0.62	2
36	36. Soil health and RA are the same thing.	0.63	2	0.49	1
37	37. RA is the newest buzzword, there will be another one in a couple of years.	0.27	1	1.50	3
38	38. Photosynthesis, nutrient cycling, energy cycling are for college kids. It's simple, "Cows eat grass and weeds are bad", are two of the most important land management principles.	-1.15	-3	2.30	-5
39	39. I really just need advice on best management practices; don't try to sell me on some philosophy of land management.	0.33	1	0.88	2
40	40. I do not need certification or confirmation from someone else to know if I am managing my operation correctly.	0.64	2	1.31	3

VITA

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Master of Science

Thesis: PERSPECTIVES OF GRAZING LANDS AGRICULTURE PRODUCERS TOWARD THE CONCEPT OF REGENERATIVE AGRICULTURE: A Q METHODOLOGY STUDY

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International Association of Wildland Fire	2021
Oklahoma Agriculture Leadership Program class XVII	2016
Agriculture Leadership of Oklahoma (ALO)-Secretary	2018-present
Leadership Murray County class XV	2018
Leadership Murray County (LMC)-Vice President	2018-present