CORN PRODUCERS' PERCEPTIONS OF TRUST TOWARD SEED CORPORATIONS

A Thesis

by

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ABSTRACT

The purpose of this study was to serve as a pilot study for future researchers to examine the perceptions of corn grain producer's trust toward seed corporations and how the corn grain producers value the information they receive from seed corporations. The data allowed seed producing corporations to understand the levels of trust corn grain producers have for seed producing corporations as their customers and how these customers value the information they receive. The goal was to highlight this information so seed producing corporations can continue to bridge the relationship between the corporation and the producers. This was a descriptive study using an online questionnaire that was conducted in cooperation with the Nebraska Corn Growers Association. The online survey was delivered to the participants who were Nebraska corn growers for the 2014 growing season through the Nebraska Corn Growers Association weekly online newsletter.

A response rate of 6.47% was achieved (N=649, n=42). The respondents of the study completed an online survey using Qualtrics™ online system. The survey included demographic questions, items to address the objectives, and 62 Likert scale items using the Organizational Trust Inventory- Long Form (OTI-LF).

The results of this study indicated factors that influence the trust of corn producers toward seed corporations. The data revealed that sales representatives (m=8.02) influence the trust levels of producers the most of any outside source. The item that indicated the highest influence for purchasing decisions of corn seed for corn

producers was the ability to yield (m=9.43). Lastly, this study examined the demographic data through frequencies and percentages. One of the items included age of corn producers. The majority of the respondents were in the age group of 30-45 years (n=22, 52.4%). The item with the highest mean from the OTI-LF was from the interaction of Dimension One and Behavioral Intentions, "We intend to monitor seed corporations' compliance with our agreement" (m=5.03). The reported mean from the participants indicated that the participants "Agree" with the statement. The item with the lowest mean from the OTI-LF was from the interaction of Dimension Two and Behavioral Intentions, "We intend to misrepresent our capabilities in negations with seed corporations" (m= 2.91). The reported mean from the participants indicated that the participants "Disagree" with the statement.

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CHAPTER I

INTRODUCTION

The industry of agriculture faces new challenges every year, especially those producers who raise corn. Today's farmer produces 262% more food compared to 1950 (American Farm Bureau Federation, 2014). Currently, one producer is feeding about 155 people, whereas 60 years ago, one producer was feeding 26 people (Monsanto, 2010). In 2013 a report was published describing the demographic of current U.S. producers. Of the total U.S. population, only 2% live on a farm, and less than 1% claim farming as an occupation (U.S. Environmental Protection Agency, 2013). The U.S. corn grain industry plays a major role in the world food production as U.S. farmers produce about 40% of the world's corn (American Farm Bureau Federation, 2014). A report from 2011 shows the United States' corn industry generated $63.9 billion in cash receipts from sales (United States Department of Agriculture, 2013). Food consumers rely on producers to provide the world with food. Examining the corn grain industry, there are multiple factors that affect the ability to produce corn for consumers. Consumers notice the cost of products containing corn fluctuates in the market today. The cost of the products containing corn varies due to the different factors corn producers face in their operations.

One of the major factors that affects prices to the producer and therefore the food consumer is the cost of inputs. Examples of inputs producers experience would be; seed, fertilizer, fuel, chemicals, etc. In 2014, the national average for one bag of corn seed was $264 per bag (Anderson, 2014). Depending on the size of planting population

the producer chooses, typically one bag will cover about three acres. For example if you were going to plant 9,000 acres, this means you have to invest $792,000 just in seed. Producers are never guaranteed that the seeds they purchase will produce, or that weather will not destroy their crops. Farming can be one of the biggest gambles (Cooper, 2014). Producers need to trust that seed producing corporations are providing them the best opportunity to make enough money to cover their input cost and make a living.

Large seed corporations are often in the press media spotlight for their practices. One recent event involves United States farmers and grain processors suing a major seed corporation because the seed corporation allowed one of its corn products to be in the global market. The producers harvested the corn grain and transported it to the grain processor. The grain processors had exported grain corn containing the unapproved corn to a large corn importing country. The importing country would not accept the corn grain because it contained genetic traits that had not been approved. The transportation of corn containing an unapproved product affected the United States corn market causing prices to plummet. This incident has the potential to affect the trust corn producers have toward the company responsible, as it affects all corn producers in the United States as they lost money (Ranii, 2014).

In the United States press media and the agriculture industry, a major topic in discussion is genetically modified organisms (Strom, 2015). A strong debate continues on both sides of the argument. The genetically modified organism (GMO) topic has been addressed through multiple outlets from social media, news reports, social and scientific research, and political protest both negatively and positively. The opinions from

individuals in the public could affect the trust corn producers have for the seed corporations who manufacture the products. An article was published discussing concerns individuals demonstrated about a particular seed corporation's lack of transparency due to the seed corporation's restricted access to research data. The seed corporation's justification for not displaying information is to protect their patents which includes intellectual property (Mui, 2014). Whether the claims made against seed corporations are true or not, the negative opinions could affect corn producers' trust, by influencing their own opinions.

The primary goal for conducting this study was to research the perspectives of corn producers' trust. Trust can be connected to multiple areas including commitment with business, future purchasing motives, product trust, and buyer- seller relationship (Seppänen, Blomqvist, & Sundqvist, 2007). Trust is important because when people trust, they are more likely to be loyal and exhibit commitment (Cropanzano & Mitchell, 2005). Since there are numerous topics in the news today that report negative perceptions of seed corporations, this study wanted to examine corn producers' trust and determine if these negative views could impact the trust of corn producers toward seed corporations. The more trust a corn producer has, the more loyal they could remain to a seed corporation (Cropanzano & Mitchell, 2005). "Higher levels of trust reduce the need for and cost of making, monitoring, and enforcing agreements" (Bromiley and Cummings, 1995, p.229). If the findings from the study show trust is lacking in the relationship between corn producers and seed corporations, hopefully the results could provide seed corporations a better understanding of areas they could improve to promote

stronger trust, which could create more profit to the seed corporation from the loyalty developed through the social exchange of trust. A potential ripple effect of seed corporations becoming more profitable, could lower the cost of the corn seed that corn producer's purchase, then create the potential for lower cost for the consumers to purchase their food products. Other reasons for seed corporations becoming more profitable from their interactions with corn producers, would be the profit earned from corn producers' purchases due to an increase of trust would allow for seed corporations to provide more funding in their efforts for research of corn. The result of the research could improve the world food supply by developing better products to sell for corn producers to grow and harvest.

This study investigated the perceptions of Nebraska corn producers and their level of trust toward seed companies. What are their perceptions of the information they receive from seed corporations? Do they value the information? Do they believe that the information is biased? What are the different methods corn grain producers receive information, and which methods of receiving information would they prefer? Through this study, perceptions of producers will be measured so that seed producing corporations can evaluate their approach, and make changes as needed to continue to build relationships using trust. Other items in the study to investigate include accessing corn producers' trust of seed corporations using an instrument designed to measure trustworthiness. The design of the instrument will examine trust of corn producers based from their perceptions of how they feel, think, and intend to behave toward seed corporations.

Purpose and Objectives

The research objectives for this study are as follows:

1. Describe corn producers purchasing decisions from seed corporations,
2. Describe how information is currently received by producers about corn products,
3. Describe the methods corn producers prefer to receive information about corn products,
4. Assess sources that influence the trust of seed corporations,
5. Evaluate factors that influence corn producers trust and purchasing decisions,
6. Assess corn producers' levels of trust toward seed corporations using an inventory questionnaire.

Operational Definitions and Acronyms

The following terms have been defined to assist the reader's ability to understand the study:

- BTB- Business to Business; an economic term to describe a relationship exchange between two businesses, both of which seek to make a profit.
- Corn – a current U.S. grain row crop that is harvested for human and animal consumption. It is planted to be sold at a grain elevator for food processing.
- GMO- Genetically Modified Organism, an organism that experienced a change in its DNA by genetic engineering.

- NCGA- National Corn Growers Association- a national organization representing corn growers in the United States and serves as a national body over state corn growers associations.
- NEGCA- Nebraska Corn Growers Association, "an organization committed to enhance and expand the use, marketing and efficient production of corn, and to do everything within the capability of the association that will benefit the Nebraska Corn Producer" (Nebraska Corn Growers Association, 2010).
- Producer- someone that plants, grows, manages, and harvest food products through agriculture practices.
- Seed producing corporation- a company that manufactures corn seed through genetic science and sells the products to producers.
- Trait- "An important characteristic of a crop (such as drought tolerance or insect resistance) that is determined by a specific gene or set of genes." (Monsanto, 2002).
- Trust- "the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor," (Mayer, Davis, & Schoorman, 1995, p. 172).
- USDA- United States Department of Agriculture.

Limitations

1. The participants of the study are members of the NECGA. Not all corn producers in Nebraska may be members of the NECGA. Therefore, the results cannot be generalized to all corn producers in the state of Nebraska.

2. The list of participants are from Nebraska. Therefore, results cannot be generalized to corn producers of the United States.
3. Internal and external influences cannot totally be controlled.

Assumptions

For this study, the following assumptions will be made:

1. All participants were Nebraska corn grain producers who are members of the Nebraska Corn Growers Association (NECGA).
2. All participants answered the survey honestly to the best of their ability.
3. NECGA did not have an opportunity to create a biased collection of data, or have any input on the instrument that would create a change in participant's responses.

CHAPTER II

LITERATURE REVIEW

Introduction

This chapter is an overview of the literature regarding trust as it relates to organizations and consumers. The social exchange theory, components of organizational trust, and a matrix for trust will construct the theoretical framework to guide this study. The literature review includes a general review of factors that affect trust as there is a limited amount of research examining trust as it relates to agricultural corn producers and agricultural corporations.

Trust

Trust is needed to maintain business performance (Barney & Hansen, 1994). Konovsky and Pugh (1994) mentions that trust is needed to maintain social exchange, especially early in the relationship. Trust is something one party cannot force or control onto another party to satisfy their goals (Whitener, Brodt, Korsgaard, & Werner, 1998). Trust can help avoid conflicts or disagreement by supporting cooperation through social exchanges (Nunkoo & Ramkissoon 2012). Nunkoo and Ramkissoon (2012) states that trust is predicted by peoples' perceived benefits, cost, and level of power of themselves. Research has identified factors to establish and maintain relationships, one of the most important factors identified is trust (Blomqvist, 2002; Ford *et al.,* 1988; Parkhe, 1998; Sako, 1998). Being that trust is a major component in social relationship, trust is difficult to build (Neves & Caetano, 2006).

When examining trust, a number of factors have been used in research to identify trust, but the common three found in the literature are: ability, benevolence, and integrity (Mayer *et al*., 1995). According to Mayer *et al*. (1995), ability, benevolence, and integrity need to be investigated in terms of being part of a continuum for trust rather than stating a trustee can only be determined trustworthy or not trustworthy. According to Seppanen *et al*. (2007), studies have been conducted in areas of sociology, psychology, and social psychology that have influenced trust literature for business studies. "Although trust in general is indispensable in social relationships, it always involves an unavoidable element of risk and potential doubt. We would not have to accept this risk if there were some functional alternative to trust" (Lewis, & Weigert, 1985, p.968).

The main factors that create a positive relationship are trust and commitment. Each of these factors can develop outcomes of efficacy and cooperative behavior (Morgan & Hunt, 1994). According to Molm, Takahashi, and Peterson, (2000), "In negotiated exchanges, joint decision making informs actors of the benefits they will receive from the exchange, agreements, when binding, guarantee that those benefits are delivered. Although uncertainty in the bargaining process itself remains, that form of uncertainty should have less bearing on the development of trust"(p.1404). Trust is influenced by two variables of organization; contextual and interpersonal (Chan, 1997). A person's behavior reflects their trustworthiness, which determines if trust can be developed (Molm *et al.* 2000).

Organizational Trust

According to Kramer and Tyler (1996) when analyzing the foundation of trust, two main issues evolve; (a) understanding the importance of trust in organizations, (b) understanding why people trust. Organizational trust is defined as, "the degree of trust between units of an organization or between organizations" (Cummings & Bromiley, 1996, p.302). It is believed that trust will reduce transaction cost between organizations (Bromiley & Cummings, 1995). Cummings and Bromiley (1996) developed an instrument known as The Organizational Trust Inventory (OTI) to measure trust in organizations. The instrument was developed into two versions, the Organizational Trust Inventory- Long Form (OTI-LF) and the Organizational Trust Inventory- Short Form (OTI-SF). The instrument was based on Cummings and Bromiley (1996) definition of trust. Trust was defined as,

"an individual's belief or a common belief among a group of individuals that another individual or group (a) makes a good- faith effort to behave in accordance with any commitments both explicit or implicit, (b) is honest in whatever negotiations preceded such commitments, and (c) does not take excessive advantage of another, even when the opportunity is available" (Cummings & Bromiley, 1996, p. 303).

Cummings and Bromiley (1996) mentioned the reasoning for using the definition of trust is based on the socially embedded, subjective, and optimistic nature of interactions that experience trust within and between organizations. Most interaction in organizations depends on the three previous mentioned characteristics which make trust important (Cummings & Bromiley, 1996).

This study of measuring corn producers' perceptions of trust used a model called the Definitional Matrix of Trust as a Belief (Cummings & Bromiley, 1996). The model is illustrated in *Figure 1*. The matrix is a three-by- three model divided into nine cells that describes the relationship between the three components of belief and the three dimensions of trust. Each cell represents a relationship between a component of belief and a dimension of trust. Cummings and Bromiley (1996) developed survey questions that would directly correlate to each of the cells of the matrix. For the purpose of this study to examine corn producers' trust, the matrix was used to explain the relationship of the questionnaire items to the responses of the participants.

Hammoud (2013) used the OTI instrument for computer science research to measure the association between levels of organizational trust and software testing estimation from software testing leaders. The purpose for Hammoud (2013) study was to show how improvements can be made for project planning and managing process. Another example of a study that used the OTI, was Anghel and Glaser-Segura, (2004). The OTI instrument used in Anghel and Glaser-Segura, (2004) study was to measure organizational trust in inter-organizational cooperation for the trading of goods in Romania's industrial organizations. The data revealed strong relationships of organizational trust, however the cultural factors of low trust were present in the findings.

		Component of Belief		
		Affective	Cognitive	Behavior Intention
Dimension of Trust	Keeps Commitments			
	Negotiates Honestly			
	Avoids Taking Excessive Advantage			

Figure 1. Definitional Matrix of Trust as a Belief

Cummings and Bromiley (1996) developed the two versions of the OTI instrument. The two versions include similar components of constraints described as the following; the questions for the inventories would omit the word "trust" from being used, there would be approximately the same number of questions for each dimension, the questions developed for the inventories reflect the dimensions by using designed language phrased accordingly to each item, each item was developed to be simple and easy to understand for the participant, and lastly the questions were phrased at a unit or group level (Cummings & Bromiley, 1996). The two versions use a seven point scale for item responses. The scales range from strongly disagree (1) to strongly agree (7).

The OTI-LF involves three dimensions based on the characteristics of the definition of trust and three components. The three dimensions are; "belief that an

individual or group makes good- faith efforts to behave in accordance with any commitments both explicit and implicit", "belief that an individual or group is honest in whatever negations (more generally, any interactions) preceded such commitments", and "belief that an individual or group does not take excessive advantage of another even when the opportunity is available" (Cummings & Bromiley, 1996, p.304). The three dimensions are Affective, Cognitive, and Behavior Intention. The questions in the OTI-LF used the designed language to reflect each of the three components that assisted the measurement of trust. The language used in the development of items in the components included; (Affective) the way people feel, (Cognitive) the way people think, and (Behavior Intent) the way people intend to behave (Cummings and Bromiley, 1996, p.306).

There are 62 items included in the OTI-LF. The OTI-SF version was developed without sacrificing substantial measurement assets that would affect the reliability and validity of the instrument while still providing the ability to measure organizational trustworthiness (Cummings & Bromiley, 1996). The OTI-SF version of the instrument only uses 12 items for participants to measure their levels of trust. The reason for developing the OTI- SF was described by the researchers as another instrument to measure organizational trustworthiness without being overly long compared to the OTI-LF. Cummings and Bromiley (1996) state that the OTI-LF may be too long for researchers to use if they want to minimize time for their study. The Intended Behavior (IB) items were omitted based on lower item correlation to the factor (Cummings & Bromiley, 1996). Only items from the other two dimensions that showed a high item to

factor correlation were used, however the numerical value of deciding which items were high item to factor compared lower item to factor was not mentioned. Additional items were omitted to the instrument shorten while maintaining a reliability of .92 for the OTI-SF.

Theoretical Framework

The Social Exchange Theory (SET) has become increasingly popular in the discipline of organizational behavior as an influential concept for understanding workplace behavior (Cropanzano & Mitchell, 2005). The social exchange theory is known as one of the widely used theoretical perspectives in the area of social psychology (Cook, Cheshire, Rice, & Nakagawa, 2013). According to Cook and Emerson (1978), "Social exchange theory has focused on the very phenomenon which economic exchange theory treats as indeterminate" (p.722).

Blau (1964) mentions that social exchange brings forth characteristics of social interaction and interpersonal relations. SET has been defined multiple ways; the definition used for this study is,

"social exchange, broadly defined, can be considered to underlie relations between groups as well as those individuals; both differentiation of power and peer groups ties; conflicts between opposing forces as well as cooperation; both intimate attachment and connections between distant members of a community without direct social contact" (Blau, 1964, p. 4).

Relationships that develop over time can be placed into constructs of commitment, loyalty, and trust which are basic concepts of SET (Cropanzano &

Mitchell, 2005). Through multiple research efforts exploring SET, trust seems to be one term that consistently appears as it provides a foundational structure for SET, "Trust has been used in empirical research on BTB exchange as a partial operationalization of SET", (Lambe, Wittmann, & Spekman, 2001, p. 21). According to Molm (1988), "The principal difficulty in studying social exchange relations in natural settings is that of measuring or manipulating exchange values with precision" (p.122).

SET is established from active behavior of one party trusting the other party, this interaction provides social rewards (Whitener *et al.,* 1998). Buss (1983) defines social reward as, "particular social responses that one person offers another" (p.556). Social rewards could include forms of praise, attention, affection, and sympathy (Buss, 1983). These rewards are developed through the behaviors exhibited through social interaction from one person to another (Buss, 1983). Behavior that creates positive experiences are likely to be repeated, and that the behavior displayed in past social exchanges will be rewarded on similar occasions (Homans, 1961).

This study explored the perceptions of trust from corn producers using SET. In the agricultural industry, most corn producers interact in social relationships with sales representatives to purchase their corn seed. These interactions are forms of social exchange. "The formation of exchange relations occurs among organizations primarily for two interrelated reasons: specialization and scarcity. Most organizations perform specialized functions and therefore must exchange with other organizations" (Cook, 1977, p.64). This study examines trust of the social relationships using SET.

Summary of Literature Review

The SET used in the study guided the measures used to determine corn producers' trust toward certain corporations in the seed producing market. By using SET as a framework for this study assisted the examination corn producers' perceptions of their trustworthiness towards seed corporations. According to the literature previously mentioned, SET provides a framework for examining the understanding of perceptions from corn producers so that seed producing corporations can gain a better understanding of their relations with the producers. By measuring the interactions between the dimensions and components of trustworthiness from the OTI-LF and the other items from the questionnaire which include; demographic questions, items to determine corn seed purchases, methods of receiving information, items to examine sources of trust, and factors that influence trust, a better understanding of corn producers' relations with seed corporations will be achieved as a result. This will provide seed corporations an understanding of corn producers' perceptions of trustworthiness toward seed corporations.

CHAPTER III

METHODOLOGY

Introduction

This section detailed the methods used for the study. The purpose of this section was to describe the design for the study, population, sample, instrumentation, data collection, and data analysis used for the study. Each item is discussed in detail in the sections below.

Design of Study

This study used a descriptive survey research design. According to Ary, Jacobs, and Sorensen (2010) descriptive research should ask questions about the variables of nature, incidence, or distribution through description and not manipulation. Fraenkel, Wallen, and Hyun, (2009), mention that descriptive research is one of the most common types of research for education. Data collection for the study was a web-based survey delivered to the participants for the advantage of convenience, lower cost, and quicker turnaround (Fraenkel *et al.,* 2009). The information was collected using a questionnaire, which generated numerical data to answer questions to meet the objectives for the study (Ary *et al*., 2010). This study contained a cross-sectional design. Fraenkel *et al* (2009) describes a cross-sectional survey to be a collection of data from a pre-determined sample. In the section below, cross-sectional design will be apparent from the method of the sample selected for the study.

Population and Sample

The target population for this study was current U.S. corn producers from Nebraska, which is a top five state in the U.S. that produces corn as determined by the USDA (U.S. Department of Agriculture, 2013). The accessible population in this study was a convenience sample of corn producers from Nebraska that are current members of the NECGA (Nebraska Corn Growers Association). The relationship with NECGA was developed through a joint effort between the researcher and the National Corn Growers Association (NCGA). The NCGA is the national organization for corn growers that represents the state corn grower associations. The NCGA provided the researcher with contacts from the NECGA. The NECGA is a state organization in which anyone can be a member, however the researcher wanted to access only those who currently grow corn. Furthermore, only the members who grew corn for the 2014 growing season were included to ensure the population was most current members. The study used the NECGA's weekly online newsletter to invite participants to the study. The online newsletter is sent to 998 members of the Nebraska Corn Growers Association, of those members who receive the online newsletter, only 649 are actual corn producers.

To ensure the sample contained only participants that are corn producers and not just dues paying members, questions were asked at the beginning of the survey to clarify whether or not the participant was a corn producer. If NECGA members did not satisfy the criteria desired, Qualtrics™ would direct the members to the end of the survey, and members were not allowed to participate in the survey. Of the 649 corn producers who

could have responded to the questionnaire, there were a total of 42 who completed it (n = 42) for a response rate of 6.47%.

The researcher recognizes non-response error for this study. According to Linder, Murphy, and Briers (2001) there are methods to handle nonresponse. These methods were out of control for the researcher due to limitations presented from NECGA. One method to control nonresponse was to compare early and late respondents. This study did not have enough responses to allow for a comparison of the two groups. Another method included to follow up with a sample of non-respondents. The NECGA did not allow the researcher contact information of its members, therefore the researcher was not able to conduct a sample of non- respondents. The last method to address nonresponse was to compare respondents to the population based on demographics. Statistical data was not available on demographics of the population for the researcher to compare the respondent from the study.

Instrumentation

The instrument for this study was a questionnaire which included the Organization Trust Inventory- Long Form (OTI-LF), a list of questions developed by a panel of experts from industry and academia related to the objectives of the study, and demographic information. . The OTI-LF is an instrument developed by Cummings and Bromiley (1996) to measure organizational trust. This questionnaire used a seven point scale to measure organizational trust of 62 items (1= Strongly Disagree, 2= Disagree, 3= Slightly Disagree, 4= Neither Agree nor Disagree, 5= Slightly Agree, 6= Agree, 7= Strongly Agree). Permission was granted from the author of the instrument, the

questions were adapted by the researcher to the subject matter for the participants. The permission was granted through email and phone by the developer to use the instrument for the study. The developer allowed the researcher to convert the OTI-LF for online use and to adapt the verbiage to align with the study. The questionnaire was administered to participants online through Qualtrics™.

Cummings and Bromiley (1995) reported reliability for each dimension and component relationship of the OTI-LF. The outputs of reliability for Dimension one is; Affective (.90), Cognitive (.96), and Behavior Intent (.84). Dimension two's reliability is Affective (.93), Cognitive (.94), and Behavior Intent (.78). The reported reliability for Dimension three is; Affective (.89), Cognitive (.92), and Behavior Intent (.88). The composite reliability of all dimensions was; Affective (0.95), Cognitive (0.95), and Behavior Intent (0.96). The developers stated the reliability analysis was calculated using Cohen's kappa (Cohen, 1960) which is a coefficient to measure inter-rated qualitative items statistically to ensure agreement. Cummings and Bromiley (1996) reported that the instrument had established face and content validity.

The study also included items in the questionnaire that were designed to help meet the research objectives. The items were selected by a research panel of experts from academia and industry. Other items included in the questionnaire consisted of five demographic questions, two items to determine corn seed purchases, two items that determined methods of receiving information, an item for sources of trust using a ranking system of one to eight, and three items for factors of influencing trust which used a scale system of zero to ten and a ranking system from one to seven.

Data Collection

A modified version of Dillman, Smyth, and Christian, (2014) tailored design method was followed to assist in collecting the data using Qualtrics. Dillman *et al.* (2014) recommends contacting participants multiple times through email. There is no specific amount of times to contact the participants according to Dillman *et al*. (2014). The NECGA organization strives to maintain privacy for its members. The researcher was not allowed to have a direct list of NECGA members contact information. The NECGA distributed the survey to its members using their weekly online newsletter. The online newsletter contained information concerning the research and a link for members to access that would direct them to the survey. The researcher followed Dillman *et al.* (2014) to the best of their ability due to the restrictions from NECGA on accessing their membership database.

Four points of contact were made to the NECGA members using the modified version of Dillman *et al*. (2014) that included an initial email with survey link in the first online newsletter. Three follow- up contacts were made by continuing to include the information and survey link in the newsletters that followed for three more continuous weeks. The survey was administered using the Qualtrics™ software which collected the participant's responses. The purpose for the researcher to use Qualtrics™, was the ability to not only create the survey, but have detailed information concerning responses. The method of using Qualtrics™ allowed the data to be downloaded into statistical software for data analysis. The newsletter containing the survey was emailed to the NECGA members every Friday for an entire month, for a total of four contacts.

The researcher recognizes the presence of coverage error (Dillman, 2000) in the study that existed from the method of delivering the survey to the accessible population which was required by NECGA. The survey was send to only those members of NECGA who receive the online newsletter from the association. This method failed to include all members of NECGA who could be corn producers.

Data Analysis

The data from the survey were transferred from Qualtrics™ and analyzed using a computer software called Statistical Package for Social Sciences (SPSS). The data were placed in a SPSS spreadsheet to make the navigation easier to analyze the data. The demographic questions were analyzed through SPSS using frequencies and percentages. Likert- type responses were analyzed using means and standard deviations. The means from the Likert- type responses were interpreted as follows: 1.00-1.50= Strongly Disagree, 1.51-2.50= Disagree, 2.51-3.50= Slightly Disagree, 3.51-4.50= Neither Agree or Disagree, 4.51-5.50= Slightly Agree, 5.51-6.50= Agree, and 6.51-7.00= Strongly Agree. There were no correlations analyzed because the *n* for this study did not contain enough respondents to place in groups to conduct comparative statistics.

CHAPTER IV

RESULTS

Introduction

The purpose of this study was to examine the perceptions of corn grain producers' trust toward seed producing corporations. The findings for this study were explained using the research objectives established in Chapter I by the researcher.

Demographic Data

The study used the online survey system, Qualtrics™ to collect responses from the participants. Included in the questionnaire were questions specifically designed to collect demographic data from the participants. The demographic data was analyzed for mean, standard deviation, frequencies and percentages using the SPSS software.

Majority of the participants responded to their age ranged as 30- 45 years old (n=22). Other characteristics of the demographic data included the number of years the participants have been growing corn (m=19.98, SD= 12.90), the majority of the participants (n=29) indicated their highest education degree was a Bachelor's degree. In regard to the amount of corn acres planted for the 2014 growing season, 38.1 % (n=16) reported they planted 1000-1499 acres in corn. The survey asked the participants if farming was their main source of income, in which 69% (n=29) agreed. Table 4.1 provides a complete list of demographic items obtained from the questionnaire.

Table 4.1

Demographics of Corn Producers (N=42)

Demographic Variables	*f*	*%*
Age		
18-29 years	11	26.2
30-45 years	22	52.4
46- 60 years	4	9.5
60- 75 years	5	11.9
75+ years	0	0.0
Education		
High school/ GED	12	28.6
Bachelor's	29	69.0
Master's	1	2.4
Doctorate	0	0.0
Corn acres planted in 2014		
1-499 acres	7	16.7
500- 999 acres	12	28.6
1000- 1499 acres	16	38.1
1500- 1999 acres	4	9.5
2000+ acres	3	7.1
Farming main source of income		
Yes	29	69.0
No	13	31.0

Objective I

The purpose for research Objective I is to describe purchasing decisions of corn producers in regards to which seed corporation(s) they prefer to buy their corn seed. The objective was divided into two different categories of the survey: (a) corporations corn producers have purchased corn seed from in previous years, and (b) corporations corn producers purchased corn seed from in 2014. The list of corporations was developed by the researcher in conjunction with the NECGA. The seed corporations were listed with their brand names to help eliminate any confusion of which corn seed brand belonged to

which seed corporation. The participants selected "yes" or "no" for their response to each seed corporation. The responses were analyzed using frequencies and percentages to describe the findings. The seed corporation with the most previous purchases selected was Monsanto at 100.0% (*n*=42). The corporation with the least amount of previous purchases was Land O' Lakes at 4.8% (*n*=2). Table 4.2 contains the full list of responses regarding corn producers' previous purchases of corn seed products.

Table 4.2

Previous Seed Corporations Purchased from (N=42)

Seed Corporations	*f*	*%*
Monsanto	42	100.0
DuPont Pioneer	22	52.4
Syngenta	20	47.6
Dow AgroSciences	12	28.6
Beck's Hybrids	6	14.3
Limagrain/ AgReliant	4	9.5
Land O' Lakes	2	4.8

The second category for participants to respond on their purchases of corn seed was which corporation(s) they purchased corn seed from for the 2014 growing season. The results were analyzed using descriptive analysis of frequencies and percentages. The corporation with the most 2014 purchases as selected by the participants was Monsanto (*n*=36). The corporation with the least amount of purchases for 2014 was Land O' Lakes with 2.4% (*n*=1) as selected by the respondents. Table 4.3 contains the full list of responses regarding corn producers' 2014 corn seed purchases from seed corporations.

Table 4.3

2014 Corn Seed Purchases (N=42)

Seed Corporations	*f*	*%*
Monsanto	36	85.7
DuPont Pioneer	18	42.9
Syngenta	8	19.0
Beck's Hybrids	6	14.3
Dow AgroSciences	6	14.3
Limagrain/ AgReliant	3	7.1
Land O' Lakes	1	2.4

Objective II

Objective II was to describe the methods corn producers receive information about corn products. Information received may influence purchasing decisions and build a relationship between corn producers and seed corporations. On the questionnaire, the participants selected all the methods they received information. The responses were analyzed in SPSS using the descriptive analysis function to report frequencies and percentages. The method corn producers receive information about corn products the most is from their sales representative with a reported percentage of 90.5% (*n*=38). The method of receiving information on corn products that corn producers receive the least was from extension services reporting at 9.5% (*n*=4). Table 4.4 contains the full list of responses regarding methods corn producers receive information about corn products.

Table 4.4

Methods Corn Producers Receive Information on Corn Products (N=42)

Methods	*f*	%
Sales Representative	38	90.5
Field Days	29	69.0
Other Farmers	25	59.5
Seed Corporations	24	57.1
Email	24	57.1
Seed Consultants	17	40.5
Postal Mail	17	40.5
Social Media	12	28.6
Phone	7	16.7
Extension Service	4	9.5

Objective III

The purpose for Objective III is to describe the methods that corn producers prefer to receive information about corn products. Participants were asked to select all the methods they preferred. The responses were analyzed as descriptive variables from the responses of the participants. It should be noted that 100.0% (*n*=42) of corn producers prefer not to receive information about corn products. The data shows that if information of corn products were to be received, corn producers mostly prefer to receive information from sales representatives 88.1% (*n*=37). The least preferred method to receive information about corn products was through the method of phone 9.5% (*n*=4). Table 4.5 contains the full list of responses regarding methods corn producers prefer to receive information about corn products.

Table 4.5

Preferred Methods to Receive Information on Corn Products (N=42)

Methods	*f*	*%*
None	42	100.0
Sales Representative	37	88.1
Email	21	50.0
Postal Mail	10	23.6
Packages	7	16.7
Phone	4	9.5

Objective IV

The purpose of research Objective IV is to describe where corn producers acquire their sources of trust toward seed corporations. The following sources were listed on the survey: sales representative, seed consultants, peers, news sources, social media, university trials, advertisements, and lending institutions. Participants ranked the sources from one to eight based on their perspective of sources for trust. The responses were analyzed using descriptive statistics of frequencies (*f*), percentages (*%*), means (*m*), and standard deviations (*SD*). The purpose for analyzing the data using these methods was to examine the responses of each individual item, and determine the rank of the items according to the collective responses by the participants. The lower the mean score (*m*), the higher the item ranked, and the higher the mean score (*m*), the lower the item ranked according to the participant's responses. The highest ranked item for source of trust was sales representative (*m*= 1.57). Sales representative was ranked the highest by the participants 59.5% (*n*=25). The lowest ranked item was Lending Institutions (*m*=6.52). Lending Institutions was ranked the lowest by the participants 28.6% (*n*=12).

Table 4.6 contains the full list of responses regarding corn producers' sources that influence trust of seed corporations.

Table 4.6

Sources that Influence Trust of Seed Corporations (N=42).

Descriptive analysis: Ranking	*m*	*SD*
Sales representative	1.57	0.80
Seed Consultants	2.88	1.64
Peers	2.98	1.41
News Sources	4.71	1.33
Social Media	5.29	1.87
University Trials	5.71	2.37
Advertisements	6.33	1.12
Lending Institutions	6.52	1.39

Note: The items were ranked 1 thru 8. The lower the mean score, the higher participants ranked the item.

Objective V

The purpose for Objective V is to evaluate different factors that influence corn producers' trust and corn purchasing decisions. The questionnaire included multiple variables for participants to select the factors that influenced their trust and purchasing decisions. The justification of having multiple variables for the factors of influence was to achieve a deeper understanding of the participant's perspectives and preferences of influence. The variables on the questionnaire were designed using a scale and rank system. The results for Objective V were analyzed using descriptive statistics and reported in three sections; factors that influence levels of trust with seed corporations

(scale), factors that influence purchase decision (scale), and factors used in purchasing (rank). The data are reported using means and standard deviations.

Factors that Influence Levels of Trust

The first section for Objective V is determining the factors that influence a corn producer's level of trust toward a seed corporation. Participants used a slide-bar to respond to each item on a scale of zero to ten. Sales representatives was reported with the greatest mean (m=8.02). The lowest mean score was 2.31 for Universities indicated the lowest influence for trust with seed corporations. Table 4.7 contains the full list of responses regarding factors that influence corn producers' level of trust for seed corporations.

Table 4.7

Factors that Influence Corn Producers' Level of Trust toward Seed Corporations (N=42).

Factors	*M*	*SD*
Sales representative	8.02	1.83
Agronomist	6.83	2.40
Farmer dealer	6.19	3.29
Brand name	5.64	2.68
Advertisements	2.88	2.57
Media	2.45	2.44
Universities	2.31	2.78

Note: 0= None, 1= Very Little Influence, to 10= A Lot of Influence.

Factors that Influence Purchase Decisions

The second section for Objective V was to describe factors that influence corn producers' decisions for purchasing corn. The questionnaire consisted of a slide-bar for participants to indicate their responses for each factor on a scale with a range from zero to ten. The item with the greatest mean was ability to yield (m=9.43). The item that reported the least amount of influence was lending institutions (m=1.17). Table 4.8 contains the full list of responses regarding factors that influence corn producers' purchasing decisions.

Table 4.8

Factors that Influence Corn Producers' Purchase Decision (N=42).

Factors	*M*	*SD*
Ability to yield	9.43	0.89
Traits	7.69	2.49
Relationship with Sales representative	7.38	2.76
Seed quality	7.31	2.67
Seed consultant	5.21	3.67
Brand	5.19	3.01
Other farmers	4.86	2.90
Price	4.60	4.02
Return policy	2.86	3.48
Advertisements	2.48	2.32
Lending institutions	1.17	1.74

Note: 0= None, 1= Very Little Influence, to 10= A Lot of Influence.

Factors Used in Decisions to Purchase

The last section for Objective V is to describe the factors corn producers consider when making decisions for corn seed purchases. The purpose for including the variable

was to encourage corn producers to rank the factors. This method leads the participants to make a decision of selecting an item they deem as a greater influence as opposed to indicating each factor using a scale variable. An item using a scale system may not provide a clear understanding of which factors the participants' believe to affect their purchasing decision greater than the others factors. The questionnaire was composed of seven factors for the corn producers to rank for the specific variable. The responses were analyzed using means and standard deviations to achieve an output of a collective ranking for the factors from all participants. Frequencies and percentages were analyzed for each factor through descriptive statistical analysis. The lower the mean score, the higher the item ranked. The higher the mean score, the lower the item ranked according to the participant's responses. The factor with the highest rank was yield (m=1.33). The majority of the participants (83.3%; n=35) selected yield as the greatest factor. The factor with the lowest rank was return policy (m=6.74), and was selected by the majority of participants (81.0%; n=34) as the least important factor. Table 4.9 contains the full list of responses regarding factors that corn producers use for purchasing decisions.

Table 4.9

Factors Corn Producers Use in Decision to Purchase Corn Seed (*N*=42).

Factors	*M*	*SD*
Yield	1.33	1.05
Relationship with Sales representative	3.17	1.34
Quality	3.62	1.30
Traits	3.81	1.25
Price	3.83	1.67
Brand	5.43	1.13
Return policy	6.74	0.63

Note: Ranking from 1 to 7, lower the mean, higher the rank; higher the mean, lower the rank.

Objective VI

The purpose of Objective VI was to determine corn producers' levels of trust toward seed corporations using the Organizational Trust Inventory- Long Form (OTI-LF). The Organizational Trust Inventory (OTI) is displayed through the Definitional Matrix of Trust as a Belief model. The matrix is described by a three-by-three model, comprised of nine cells. Each cell shares a relationship between the three dimensions of trust (keeps commitments, negotiates honestly, and avoids taking excessive advantage), and three components of belief (affective, cognitive, behavior intent). The OTI-LF was designed as a Likert-type questionnaire with a seven point scale. Items were randomized in the OTI-LF questionnaire. The OTI-LF was comprised of a total of 62 items.

The respondents completed the questionnaire based on their own perspectives. The items were analyzed using descriptive statistical analysis, and the outputs of the items were grouped into their appropriate construct as defined by the OTI. Objective VI will be divided into sections of each construct from the definitional matrix for OTI.

Means and standard deviations for each item, are reported for each construct. The *n* for each item was not reported due to random missing responses from the participants throughout the OTI-LF questionnaire creating a different *n* for each item.

Dimension One: Affective

This cell of the Matrix of Trust represents the interaction between keeps commitments and the affective state. This interaction was designed to show how corn producers "feel" relative to the belief that seed corporations "make good- faith efforts to behave according to their commitments". The highest summated mean score for the item, "comfortable about seed corporations' willingness to stick to the schedule" (*m*=4.89). The "seed corporations try to get out of commitments" item had the lowest mean (*m*=3.15). None of the items from the data analysis indicated a mean of "Agree" or higher. Two items were reported as "Slightly Agree", three items were reported as "Neither Agree or Disagree", and two items reported as "Slightly Disagree". No items were reported as "Disagree" or lower. Table 4.10 provides a complete list of items that represent the matrix cell from the questionnaire.

Table 4.10

Dimension One: Affective

OTI-LF	*M*	*SD*
We feel comfortable about seed corporations' willingness to stick to schedule.	4.89	1.08
We feel seed corporations will keep its word.	4.63	1.17
We feel we can depend on seed corps to move joint projects forward.	4.49	0.97
We worry about success of joint projects with seed corporations.	3.69	0.99
We worry about seed corporations commitment to the agreed upon goals.	3.68	1.09
We feel we cannot depend on seed corporations to fulfill their commitments.	3.21	1.41
We feel seed corporations try to get out of their commitments.	3.15	1.31

Note: 1= Strongly Disagree, 2= Disagree, 3= Slightly Disagree, 4= Neither Agree nor Disagree, 5= Slightly Agree, 6= Agree, 7= Strongly Agree.

Dimension Two: Cognition

This cell of the Matrix of Trust represents the interaction between keeps commitments and cognitive. This interaction was designed to show how corn producers "think" relative to the belief that seed corporations "make good- faith efforts to behave according to their commitments". The highest summated mean score was for the item, "seed corporations' keep commitments" (*m*=4.97). The "seed corporations let us down" item had the lowest mean (*m*=2.97). None of the items from the data analysis indicated a mean of "Agree" or higher. Seven items were reported as "Slightly Agree", one item was reported as "Neither Agree or Disagree", and one item reported as "Slightly Disagree". No items were reported as "Disagree" or lower. Table 4.11 provides a complete list of items that represent the matrix cell from the questionnaire.

Table 4.11

Dimension One: Cognitive

OTI-LF	*M*	*SD*
We think seed corporations keep commitments.	4.97	1.03
We think that commitments made to us will be honored by seed corporations.	4.88	1.20
We think that seed corporations are dependable.	4.85	1.04
We think seed corporations behave to their commitments.	4.85	1.01
We think seed corporations keep their promises.	4.80	1.08
We think seed corporations are reliable.	4.80	1.26
We think that seed corporations meet negotiated obligations to our operation.	4.69	0.99
We think seed corporations keeps the spirit of an agreement.	4.40	1.14
We think that seed corporations let us down.	2.97	1.29

Note: 1= Strongly Disagree, 2= Disagree, 3= Slightly Disagree, 4= Neither Agree nor Disagree, 5= Slightly Agree, 6= Agree, 7= Strongly Agree.

Dimension One: Behavioral Intention

This cell of the Matrix of Trust represents the interaction between keeps commitments and behavioral intention. This interaction was designed to show how corn producers "intend to behave" relative to the belief that seed corporations "make good-faith efforts to behave according to their commitments". The highest summated mean score was for the item, "monitoring seed corporations' compliance with agreement" (*m*=5.03). The "doesn't plan to check seed corporations" item had the lowest mean (*m*=3.56). None of the items from the data analysis indicated a mean of "Agree" or higher. Three items were reported as "Slightly Agree", two items were reported as "Neither Agree or Disagree", and no items reported as "Slightly Disagree" or lower. Table 4.12 provides a complete list of items that represent the matrix cell from the questionnaire.

Table 4.12

Dimension One: Behavioral Intentions

OTI-LF	*M*	*SD*
We intend to monitor seed corporations' compliance with our agreement.	5.03	0.78
We intend to check whether seed corporations meets their obligations to our operation.	4.69	0.95
We intend to check seed corporations' progress with project.	4.67	.086
We intend to monitor seed corporations' behavior for timeliness.	4.35	0.95
We don't plan to check on seed corporations.	3.56	1.11

Note: 1= Strongly Disagree, 2= Disagree, 3= Slightly Disagree, 4= Neither Agree nor Disagree, 5= Slightly Agree, 6= Agree, 7= Strongly Agree.

Dimension Two: Affective

This cell of the Matrix of Trust represents the interaction between negotiates honestly and affective. This interaction was designed to show how corn producers "feel" relative to the belief that seed corporations are "honest in their negations or any interaction". The highest summated mean score was for the item, "can depend on seed corporations to negotiate honestly" (m=4.72). The "seed corporations negotiates honestly" item had the lowest mean (m=4.59). All items from the data analysis indicated a mean of "Slightly Agree". Table 4.13 provides a complete list of items that represent the matrix cell from the questionnaire.

Table 4.13

Dimension Two: Affective

OTI-LF	*M*	*SD*
We feel we can depend on seed corporations to negotiate with us honestly.	4.72	1.36
We feel that seed corporations are straight with us.	4.69	1.23
We feel that seed corporations negotiates joint project expectations fairly.	4.68	0.88
We feel that seed corporations negotiates honestly.	4.59	1.13

Note: 1= Strongly Disagree, 2= Disagree, 3= Slightly Disagree, 4= Neither Agree nor Disagree, 5= Slightly Agree, 6= Agree, 7= Strongly Agree.

Dimension Two: Cognitive

This cell of the Matrix of Trust represents the interaction between negotiates honestly and cognitive. This interaction was designed to show how corn producers "think" relative to the belief that seed corporations are "honest in their negations or any interaction". The highest summated mean score was for the item, "seed corporations fairly represents its capabilities" (m=5.00). The "seed corporations misrepresent demands in negotiations" item had the lowest mean (m=3.65). None of the items from the data analysis indicated a mean of "Agree" or higher. Five items were reported as "Slightly Agree", five items were reported as "Neither Agree or Disagree", and no items reported as "Slightly Disagree" or lower. Table 4.14 provides a complete list of items that represent the matrix cell from the questionnaire.

Table 4.14

Dimension Two: Cognitive

OTI-LF	*M*	*SD*
We think that seed corporations fairly represents their capabilities.	5.00	1.30
We think that people in seed corporations are fair in their negotiations with us.	4.82	1.41
We think seed corporations negotiate realistically.	4.65	1.04
We think people in seed corporations tell the truth in negations.	4.65	1.20
We think that seed corporations negotiate agreements fairly.	4.61	1.20
We think seed corporations do not mislead us.	4.48	1.12
We think seed corporations are open in describing their strengths and weakness in negotiating joint projects.	4.21	0.93
We think seed corporations misrepresents their capabilities in negations.	3.95	1.30
We think seed corporations negotiates important project details fairly.	3.94	1.07
We think seed corporations misrepresent their demands in negotiations.	3.65	1.46

Note: 1= Strongly Disagree, 2= Disagree, 3= Slightly Disagree, 4= Neither Agree nor Disagree, 5= Slightly Agree, 6= Agree, 7= Strongly Agree.

Dimension Two: Behavioral Intent

This cell of the Matrix of Trust represents the interaction between negotiates honestly and behavioral intent. This interaction was designed to show how corn producers "intend" to behave relative to the belief that seed corporations are "honest in their negations or any interaction". The highest summated mean score was for the item, "can speak openly in negotiations with seed corporations" (m=4.94). The "we misrepresent our capabilities to seed corporations" item had the lowest mean (m=2.91). None of the items from the data analysis indicated a mean of "Agree" or higher. One

item was reported as “Slightly Agree”, five items were reported as “Neither Agree or Disagree”, and one item reported as “Slightly Disagree”. No items were reported as “Disagree” or lower. Table 4.15 provides a complete list of items that represent the matrix cell from the questionnaire.

Table 4.15

Dimension Two: Behavior Intent

OTI-LF	*M*	*SD*
We intend to speak openly in our negotiations with seed corporations.	4.94	1.15
We intend to check on reasoning given by seed corporations during negotiations.	4.38	1.07
We intend to watch for misleading information from seed corporations in our negotiations.	4.23	1.11
We intend to question seed corporations’ statements regarding their capabilities.	4.23	0.88
We plan to document all aspects of our negotiations with seed corporations.	4.12	1.18
We intend to negotiate cautiously with seed corporations.	4.05	1.30
We intend to misrepresent our capabilities in negotiations with seed corporations.	2.91	1.40

Note: 1= Strongly Disagree, 2= Disagree, 3= Slightly Disagree, 4= Neither Agree nor Disagree, 5= Slightly Agree, 6= Agree, 7= Strongly Agree.

Dimension Three: Affective

This cell of the Matrix of Trust represents the interaction between avoid taking excessive risk and affective. This interaction was designed to show how corn producers “feel” relative to the belief that seed corporations “do not take unnecessary advantage of the corn producers”. The highest summated mean score was for the item, “seed corporations try to get the upper hand” (m=3.94). The “seed corporations take advantage

of vulnerable people" item had the lowest mean (*m*=3.47). None of the items from the data analysis indicated a mean of "Slightly Agree" or higher. Three items were reported as "Neither Agree or Disagree", one item reported as "Slightly Disagree" and no items reported as "Disagree" or lower. Table 4.16 provides a complete list of items that represent the matrix cell from the questionnaire.

Table 4.16

Dimension Three: Affective

OTI-LF	*M*	*SD*
We feel that seed corporations try to get an upper hand.	3.94	1.07
We feel that seed corporations take advantage of our operation.	3.85	1.51
We feel that seed corporations take advantage of us.	3.62	1.75
We feel that seed corporations take advantage of people who are vulnerable.	3.47	1.42

Note: 1= Strongly Disagree, 2= Disagree, 3= Slightly Disagree, 4= Neither Agree nor Disagree, 5= Slightly Agree, 6= Agree, 7= Strongly Agree.

Dimension Three: Cognitive

This cell of the Matrix of Trust represents the interaction between avoid taking excessive risk and cognitive. This interaction was designed to show how corn producers "think" relative to the belief that seed corporations "do not take unnecessary advantage of the corn producers". The highest summated mean score was for the item, "seed corporations interpret ambiguous information in their favor" (*m*=4.21). The "seed corporations take advantage of us" item had the lowest mean (*m*=3.44). None of the items from the data analysis indicated a mean of "Slightly Agree" or higher. Eight items were reported as "Neither Agree or Disagree", one item was reported as "Slightly

Disagree", and no items reported as "Disagree" or lower. Table 4.17 provides a complete list of items that represent the matrix cell from the questionnaire.

Table 4.17

Dimension Three: Cognitive

OTI-LF	*M*	*SD*
We think that people in seed corporations interpret ambiguous information in their own favor.	4.21	0.98
We think that the people in seed corporations manipulate others to gain a personal advantage.	4.15	1.48
We think that seed corporations take advantage of a changed situation.	4.10	1.23
We think that seed corporations take advantage of ambiguous situations.	3.89	1.23
We think that people in seed corporations use confidential information to their own advantage.	3.79	1.56
We think that seed corporations take advantage of our problems.	3.65	1.30
We think that people in seed corporations succeed by stepping on other people.	3.53	1.38
We think that seed corporations take advantage of our weaknesses.	3.51	1.17
We think seed corporations try to take advantage of us.	3.44	1.39

Note: 1= Strongly Disagree, 2= Disagree, 3= Slightly Disagree, 4= Neither Agree nor Disagree, 5= Slightly Agree, 6= Agree, 7= Strongly Agree.

Dimension Three: Behavioral Intent

This cell of the Matrix of Trust represents the interaction between avoid taking excessive risk and behavioral intent. This interaction was designed to show how corn producers "intend to behave" relative to the belief that seed corporations "do not take unnecessary advantage of the corn producers". The highest summated mean score was for the item, "we monitor seed corporations so they do not take advantage of us"

(*m*=4.41). The "we share information openly with seed corporations because they do not take advantage of us" item had the lowest mean (*m*=4.00). All items from the data analysis indicated a mean of "Neither Agree or Disagree". Table 4.18 provides a complete list of items that represent the matrix cell from the questionnaire.

Table 4.18

Dimension Three: Behavioral Intent

OTI-LF	*M*	*SD*
We intend to monitor seed corporations closely so they do not take advantage of us.	4.41	1.29
We intend to monitor changes in situations because seed corporations will take advantage of such changes.	4.36	1.20
We intend to work openly with seed corporations because they will not take advantage of us.	4.29	1.17
We intend to share information cautiously with seed corporations to avoid having them using it to their advantage.	4.09	1.08
We intend to check seed corporations' actions to avoid being taken advantage of.	4.06	0.95
We plan to share information openly with seed corporations because they do not take advantage of us.	4.00	1.30

Note: 1= Strongly Disagree, 2= Disagree, 3= Slightly Disagree, 4= Neither Agree nor Disagree, 5= Slightly Agree, 6= Agree, 7= Strongly Agree.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

Based on the findings from chapter IV, several conclusions, implications, and recommendations can be reported about corn producers' perceptions of trust toward seed corporations. Discussion of findings, implications, and recommendations for further research and practice is presented in this chapter.

Purpose and Objectives

The purpose of this study was to examine the perceptions of corn producers' trust toward seed corporations. The following objectives were developed to guide the purpose of the study.

1. Describe corn producers purchasing decisions from seed corporations,
2. Describe how information is currently received by producers about corn products,
3. Describe the methods corn producers prefer to receive information about corn products,
4. Assess sources that influence trust of seed corporations,
5. Evaluate factors that influence corn producers trust and purchasing decisions,
6. Assess corn producers' levels of trust toward seed corporations using an inventory questionnaire.

Summary of Methodology

This study was a descriptive research design using a web-based survey through Qualtrics™. According to Ary *et al.* (2010) descriptive research should ask questions about the variables of nature, incidence, or distribution through description and not manipulation. The accessible population in this study was a convenience sample of corn producers from Nebraska that are current members of the NECGA and grew corn for the 2014 growing season. There was a total of (N=649) members who met this criteria. A total of (n=42) respondents completed the survey resulting in a 6.47% response rate.

The questionnaire was designed to address the research objectives for the study. The questionnaire include a Likert-type survey that has been previously used in former studies. The questions were adapted by the researcher with permission from the author of the instrument to adapt the questionnaire to the subject matter for the participants. Items included in the questionnaire consisted of five demographic questions, two items to assess corn seed purchase, two items that assessed methods of receiving information, an item for sources of trust using a ranking system of one to eight, and three items for factors of influencing trust which used a scale system of zero to ten and a ranking system from one to seven. The questionnaire used an instrument for this study, the Organization Trust Inventory- Long Form (OTI-LF). This instrument used a seven point scale to measure organizational trust. Permission was granted through email and phone by the developer to use the instrument for the study. The developer has allowed for the OTL-LF to be converted to online use and to adapt the verbiage to align with the study. Demographic questions were used to examine interactions between characteristics of the

participants and the factors of trust. The questionnaire was administered to participants through Qualtrics™.

A modified Dillman *et al.* (2014) tailored design method was followed to assist in collecting the data using Qualtrics™. Dillman *et al*. (2014) recommends to contact the participants multiple times through email. The NECGA organization strives to maintain privacy for its members. The researcher was not allowed to have a direct list of NECGA members contact information. The NECGA distributed the survey to its members using their weekly online newsletter. The newsletter contained information concerning the research and a link for members to access that would direct them to the survey. Four points of contact were made to the NECGA members using Dillman *et al.* (2014) recommendations which include an initial email with survey link which was in the first newsletter. Three follow- up contacts were made by continuing to include the information and survey link in the newsletters that followed for three more continuous weeks. The survey was administered using the Qualtrics™ software which collected the participant's responses.

The data from the survey was transferred from Qualtrics™ and analyzed using a computer software called Statistical Package for Social Sciences (SPSS). The data was placed in a SPSS spreadsheet to make the navigation easier to analyze the data. Likert-type responses were analyzed using means and standard deviations. The demographic questions were analyzed through SPSS using frequencies and percentages.

Summary of Findings

This study provided an understanding of corn producers' trust toward seed corporations. The results of this study are not generalizable to all corn producers in Nebraska or the United States because there was not enough responses to meet the determined sample size needed as described by Krejcie and Morgan (1970). However the results provide an insight to the components of trust from a corn producer, including factors that influence corn producers' trust for purchasing decisions. The findings for the study are described using the Social Exchange Theory.

Objective I

To achieve this objective, corn producers were asked to indicate by rank for the two items presented; (a) which seed corporations have you previously purchased from, and (b) which seed corporations did you purchase from in 2014? The data was analyzed using frequencies and percentages. In this study, corn producers purchased seed the most from Monsanto. Corn producers purchased corn products the least from Land O' Lakes. The results of seed corporations that were purchased the most from did not change in ranking order between the two questions presented. Monsanto was purchased the most in previous years and for 2014. The purchasing of corn seed is an example of social exchange as corn producers purchase their seed from sales representatives. The sales representative make an order and help schedule a time for delivery of corn seed to the corn producer. The corn producer and sales representative must communicate each other's needs to complete the transaction. The social exchange from the transaction

between the corn producer and the sales representative can be applied using the Social Exchange Theory. SET is a framework to explain social exchanges and is becoming increasingly popular in the discipline of organizational behavior as an influential concept for understanding workplace behavior, interactions that develop over time can be placed into constructs of commitment, loyalty, and trust which are basic concepts of SET (Cropanzano & Mitchell, 2005).

A recommendation from the data for this objective would be conduct a descriptive study to examine why the participants chose to purchase from certain companies more than the other companies. What were the factors that impacted the purchase decision for each individual seed corporation? Factors that may impact purchase decisions could be the interaction with the sales representatives and/ or the ability to yield. Corn producers may prefer a seed corporation solely based on the ability of its product's ability to yield. Another factor may be that corn producers' place higher importance on the relationship with the sales representatives. SET asserts that trust, loyalty, and commitment are needed to relationships (Cropanzano & Mitchell, 2005).

Objective II

This objective described the different methods corn producers receive information about corn products. The results from the participants' responses indicated that corn producers receive the most information about corn products from sales representatives (90.5%). Other methods of receiving information that were ranked 50% or above were as followed in order; field days, other farmers, seed corporations, and

email. For this item, seed corporations were included in the questionnaire with sales representatives. Not all sales representatives are employed by a seed corporation. There are sales representatives that are employed by a private company that the seed corporations sell their products that directly conduct business with corn producers. The transaction of information is a concept within the Social Exchange Theory of developing trust and loyalty through communications and transactions of sales representatives and corn producers.

A recommendation about receiving information about corn products would be if the transaction of information is a positive experience for corn producers from their social exchange with sales representatives. Items that could be examined would include if the process of receiving information is a hassle or burden on the corn producers, and if there is a change of the transaction corn producers prefer that would make the interaction a better experience that could improve the relationship between sales representatives and corn producers. Recommendations could include if sales representatives are viewed as trustworthy according to corn producers when given information about corn products. Also would corn producers show more trust with sales representatives if they believed that sales representatives have the most current information about corn products, since the data indicates that the majority of information is provided by sales representatives.

Objective III

This objective described corn producers' preferred method of receiving information about corn products. The responses from the participants indicated two main

conclusions for this objective. Corn producers indicated at a percent rate of 100.0% that they prefer not to receive information about corn products. The other conclusion from this objective is that if the option of "none" was eliminated from the preferred methods, corn producers prefer the most to receive information from sales representatives (88.1%). The preferences could be a direct correlation to the trust corn producers have for the method type. The finding could indicate that if corn producers receive information, they want human interaction over other methods of non-human interaction. SET explains the interactions of active behavior for trusting the other party which provides social rewards (Whitener *et al*., 1998). The human interaction could be considered a social reward for corn producers. "Social rewards are an intrinsic part of social contact. When people are together or interact, these rewards tend to flow naturally in social contexts" (Buss, 1983, p.554). When reflecting this feedback to a relationship with SET, it shows that the relationship between corn producers and seed corporations could use improvements on discovering a method that corn producers prefer over not receiving information.

A recommendation for this objective would be examining why corn producers prefer not to receive information about corn products. Other recommendations could include an examination of the perspectives that corn producers believe for the information. According to the data, implications could include the lack of trust maybe a factor that could be researched for receiving information. Recommended items could include if the information is biased, or that corn producers find the methods of receiving information a hassle for them from distracting their work or the transaction of

information cost the corn producers' time that could be spent completing other task. If sales representatives are one of the preferred methods to provide information, do seed corporations focus on this method and if seed corporations do use sales representatives for the method to provide information about corn products, how much money do seed corporations invest into the process of providing information to corn producers.

Objective IV

This objective examined the sources that influence corn producers' trust towards seed corporations. The most important factor to establishing and maintaining relationships is trust (Blomqvist, 2002; Ford *et al.,* 1988; Parkhe, 1998; Sako, 1998). The data revealed that corn producers' sources of trust for seed corporations are resulted from human interactions more than non-human interactions. The participants agreed their main source of trust in order is; sales representatives (m=1.57), seed consultants (m=2.88), and peers (m=2.98).

A recommendation from this objective would be to examine other factors of why corn producers' sources of trust are greater with human interaction, than non-human interaction. An implication for the objective is the process of a personal connection may be an indicating factor for the reasons of why corn producers prefer this method. An emphasis could include an examination of seed corporations to determine if they make sure their sales representatives have the most current knowledge of the products and issues facing the industry. Other items to consider for recommendation would be to understand the current training procedures seed corporations provide to sales

representatives to assist their ability to gain more knowledge on corn products, establish rapport, and build trust with corn producers.

Objective V

This objective evaluated multiple factors that influence corn producers trust level toward seed corporations and their influence in purchasing decisions. The data showed that sales representatives (m=8.02) provided the most trust for corn producers followed by agronomist (m=6.83), and farmer dealers (m=6.19). However in the factors that influence a corn producers' purchase decision, sales representatives (m=3.17) did not rank as high as yield (m=1.33). Corn producers in the study indicated that the corn product's ability to yield (m=9.43) and the traits (m=7.69) of the product influences the purchase decision greater than the relationship with the sales representative (m=7.38). The participants also indicated that return policies (m=2.86), advertisements (m=2.48), and lending institutions (m=1.17) had very little influence in their purchase decisions. When examining the factors that influence trust, organizational trust becomes a major component as the transaction between corn producers and seed corporations is a reflection of organization to organization relationship. Organizational trust is defined as, "the degree of trust between units of an organization or between organizations" (Cummings and Bromiley, 1996, p. 302).

A recommendation based on the findings for this objective is to explore why certain factors increase purchasing decisions by examining items that can be influencing for each factor. An example would include the factor of "yield" influences purchasing

decisions greater because the profit that can be gained from the corn seed, or it yield a greater influence because corn producers want the feeling of achievement through awards or social interactions with peers. Increasing yield of corn production provides for a potential of more profit for corn producers. When examining the factor of yield, a recommendation could include if sales representatives give information concerning yield. If sales representative provide this information, how much information do they provide to corn producers. Also do seed corporations provide sales representative the most current and accurate information about information for these factors, including yield of the corn products.

Objective VI

This objective assessed corn producers' trust from the OTI-LF. The participants in the study completed the OTI-LF, which provided data about trust between corn producers and seed corporations. The OTI-LF is a questionnaire which measures the interactions corn producers have experienced with seed corporations. Findings from the OTI-LF indicted the item, "we intend to monitor seed corporations' compliance with our agreements" had the highest mean score (m=5.03) which was interpreted as "Slightly Agree" from the participants. The item with second highest mean score (m=5.00) from the OTI-LF was, "we think seed corporations fairly represent their capabilities". The mean score was interpreted that the participants "Slightly Agree" with the statement. The item with the lowest mean score (m=2.91) was, "we intend to misrepresent our capabilities in negations with seed corporations". This item was interpreted as "Slightly

Disagree" from the participants. According to Morgan and Hunt (1994) the main factors that create a positive relationship are trust and commitment. Each of these factors can develop outcomes of efficacy and cooperative behavior. The data from the OTI-LF showed improvements for trust could be made available from seed corporations to corn producers to increase trust between the two entities based from the participants' responses to the questionnaire. The improvements of trust could generate profitability for the seed corporations by establishing strong relationships and being more transparent with corn producers. The benefit for profitability could provide for more research to improve corn seed traits, which can provide an increase yield for corn producers. An increase in yield will give corn producers more profit. These factors are key components of the SET. According to SET, the stronger the relationship, the more social rewards each entity of the relationship receives (Whitener *et al*., 1998).

The participants indicated some concerns with trust for seed corporations from their responses to the OTI-LF of areas they lack trust towards seed corporations based from the statistical analysis of corn producers' mean scores. Corn producers responded in the OTI-LF, that they believe seed corporations try to get out of commitments (m=3.15). Corn producers also reported from the OTI-LF that seed corporations interpret ambiguous information for their own advantage (m=4.21). These two items could have major effects on trust between corn producers and seed corporations. The responses indicate that the participants are cautious in their relationship with seed corporations. Other data from the study shows that trust between the two groups is present, but improvements can be made.

A recommendation for this objective would be to determine the individual causes of why certain items in the questionnaire showed low trust from the corn producers. Individual causes could be former actions or events that occurred between the corn producers and the seed corporations that resulted in a negative outcome. The causes of lower trust could indicate the specific improvements seed corporations could address to increase the relationship between themselves and corn producers. According to SET, this action of addressing issues and developing improvements could establish a greater amount of trust in the relationship between corn producers and seed corporations.

Conclusions

This descriptive study indicates from the data that there is availability for improvements of trust to be made by seed corporations to corn producers. The data shows that there is a strong influence of trust for corn producers from seed corporations, however the data suggests there is some areas that lack trust. Participants indicate from the data collected that seed corporations need to be more transparent in their transactions with corn producers. According to the literature, increasing trust from seed corporations to corn producers can provide growth in loyalty, commitment, and trust through the social interactions. The increase of trust can benefit both parties by increasing profit. Corn producers are trusting of seed corporations, however there are items that could be addressed to improve the relationship and create more trust between the two organizations. Therefore, seed corporations should consider developing strategies to develop better relationships with corn producers that will result in an increase of trust from corn producers' toward seed corporations.

Recommendations

Recommendations for Practice

A recommendation for practice would be to use the Organizational Trust Inventory to analyze the trust between seed salesmen and the corn producers. This interaction is the direct connection established between the seed corporation and the farm. An evaluation of trust between these two entities could provide knowledgeable insight of how to increase the trust established for corn producers and the salesmen. By examining this aspect of the interaction, seed corporations could understand the direct effects of sales representatives. The research may reveal areas that could be improve to build strong relationships that would increase trust that could ultimately reduce transaction cost while providing customer loyalty. Other items to consider when examining the interaction between sales representatives and corn producers could include assessing the duration that sales representatives stay in their role or in a certain area. The duration could be a factor that would affect trust, by not having enough time to establish rapport and build a relationship with corn producers.

Lastly, a recommendation for practice is to examine the effects of value. The data analysis revealed the biggest factors that influence corn producers' trust. An examination could be conducted to determine the economic value of each factor. For example, if one factor indicted higher trust, would producers purchase more products or maintain loyalty to a seed corporation that in return would increase the profits for a seed corporation through the relationship? A different perspective of value would be if a factor indicated a higher amount of trust influence, what is the economic value that the factor increases?

Recommendations for Research

The results of this study provide insight for further research ideas to be conducted for measuring corn producers' trustworthiness. One suggestion is to replicate the study using a larger population of corn producers. An example would be continuing relations with corn grower state associations to target the top five corn producing states. This would provide a more accurate understanding of corn producers' perceptions of trust.

If the study was to be replicated, there are some suggested modifications that could improve the entire study. Recommendations to increase response rate would include, break the Organizational Trust Inventory- Long Form into its constructs when surveying participants. The current method is to survey participants on all 62 Likert-type items collectively. If the 62 items were divided throughout the questionnaire, response rates could increase.

A recommendation would include to increase the response rate from participants. Response rate could be affected by social norms and demographics of the participants. According to Tsiros, Ross, and Mittal (2009) response rate can increase based on the educational level and age of participants. The responses from this study indicated that 78.6% of the participants earned a Bachelor's degree or higher. 71.4% of the participants indicated that their age was between 18-45 years old. Dillman *et al*. (2014) also mentions ages as a factor that could affect response rate from the differences of people in the U.S. who have internet access, compared to those who do not have internet access.

Individuals that are 65 years or older are less likely to have internet access (Pew Internet and American Life Project, 2013). According to the USDA (2013), the average age of producers is 58.3 years and 33% of producers are 65 years of age or older. Therefore, the response rate for this study could have been affected by the age of the population used from the NECGA. A recommendation would include use a mailing survey that would be sent directly to the participants. This method would allow for those who do not have internet access or those who do not use the internet frequently to participate in the study.

An additional recommendation for increasing response rate could include sending the questionnaire directly to the corn growers. This study, the information and survey link was sent to the corn growers through NECGA's weekly online newsletter. The participants had to open the newsletter, and then search for the section containing the research recruitment announcement. For the purpose of further research, solutions would need to be developed to persuade the state associations to release growers email. This study, to the best of knowledge, was the first study NCGA and NECGA had partnered with a university to survey corn producers. Hopefully with the results of the study, the barrier could be broken for new or continuing research to be completed.

The last recommendation for increasing response rate is to use the Organizational Trust Inventory- Short Form (OTI-SF). The OTI-LF contains 62 items for participants to respond to. The length of the OTI-LF could affect the response rate negatively.

According to Galesic and Bosnjak (2009), participant fatigue may have been a factor that decreased the response rate since the length of the questionnaire affected the

amount of time each participant had to complete the survey. Participants could have become bored or refused to complete the survey due to the amount of time required. The OTI-SF only contains 12 items for participants to respond. Participants may be more motivated to complete the questionnaire if the length was shorter. The OTI-SF does not differ psychometrically and the reliability is still strong (Cummings & Bromiley 1995). A researcher may sacrifice the amount of data collected for conclusions of the study, but could increase the amount of participants that provide their perspectives.

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APPENDIX A

INSTRUMENT

CORN GRAIN PRODUCERS PERCEPTIONS OF TRUST TOWARDS SEED PRODUCING CORPORATIONS.

Q1The following study will investigate the perceptions of corn producers and their levels of trust toward seed corporations. By completing the questionnaire you consent to participate in the study. Your participation should not take longer than 15-20 minutes. Your participation in this study is completely voluntary and you are not required to participate. Please CLICK HERE to access an Information Sheet that provides additional study details.

Q2 I have read and understand the above information and desire to participate in this study.

- ❍ Yes (1)
- ❍ No (2)

If No Is Selected, Then Skip To End of Survey

Q3 Did you produce corn for the 2014 growing season?

- ❍ Yes (1)
- ❍ No (2)

If No Is Selected, Then Skip To End of Survey

Q4 Did you compete in the 2014 National Corn Growers Association's National Yield Contest?

- ❍ Yes (1)
- ❍ No (2)

Q5 What state do you live in?

- ❍ Alabama (1)
- ❍ Alaska (2)
- ❍ Arizona (3)
- ❍ Arkansas (4)
- ❍ California (5)
- ❍ Colorado (6)
- ❍ Connecticut (7)
- ❍ Delaware (8)
- ❍ Florida (9)
- ❍ Georgia (10)
- ❍ Hawaii (11)
- ❍ Idaho (12)
- ❍ Illinois (13)
- ❍ Indiana (14)
- ❍ Iowa (15)
- ❍ Kansas (16)
- ❍ Kentucky (17)
- ❍ Louisiana (18)
- ❍ Maine (19)
- ❍ Maryland (20)
- ❍ Massachusetts (21)
- ❍ Michigan (22)
- ❍ Minnesota (23)
- ❍ Mississippi (24)
- ❍ Missouri (25)
- ❍ Montana (26)
- ❍ Nebraska (27)
- ❍ Nevada (28)
- ❍ New Hampshire (29)
- ❍ New Jersey (30)
- ❍ New Mexico (31)
- ❍ New York (32)
- ❍ North Carolina (33)
- ❍ North Dakota (34)
- ❍ Ohio (35)
- ❍ Oklahoma (36)
- ❍ Oregon (37)
- ❍ Pennsylvania (38)
- ❍ Rhode Island (39)
- ❍ South Carolina (40)
- ❍ South Dakota (41)

- ❍ Tennessee (42)
- ❍ Texas (43)
- ❍ Utah (44)
- ❍ Vermont (45)
- ❍ Virgina (46)
- ❍ Washington (47)
- ❍ West Virginia (48)
- ❍ Wisconsin (49)
- ❍ Wyoming (50)

Q6 What is your age?
- ❍ 18-29 years old (1)
- ❍ 30- 45 years old (2)
- ❍ 46- 60 years old (3)
- ❍ 60- 75 years old (4)
- ❍ 75+ years old (5)

Q7 What is your highest educational level?
- ❍ some high school (1)
- ❍ high school/ GED (2)
- ❍ Bachelor's degree (3)
- ❍ Master's Degree (4)
- ❍ Doctorate (5)

Q8 How many acres is your growing operation for corn production in 2014?
- ❍ 1- 499 acres (1)
- ❍ 500- 999 acres (2)
- ❍ 1000- 1499 acres (3)
- ❍ 1500- 1999 acres (4)
- ❍ 2000+ acres (5)

Q9 How many years have you been a corn producer?
_____ Slide bar to indicate the number of years. (1)

Q10 Is your farming operation the main source of income for you?
- ❍ Yes (1)
- ❍ No (2)

Q11 Which of these companies have you purchased corn seed from in previous years? (mark all that apply)
- ❑ Beck's (1)
- ❑ Dow AgroSciences (Mycogen) (2)
- ❑ DuPont (Pioneer) (3)
- ❑ Land O' Lakes (4)
- ❑ Limagrain/ AgReliant (LG, Great Lakes) (9)
- ❑ Monsanto (Dekalb, Channel, Fontanelle) (5)
- ❑ Syngenta (NK, Golden Harvest) (6)
- ❑ none of the above (7)
- ❑ other (8) _____

Q12 Did you purchase corn seed from any of these companies in 2014? (mark all that apply)
- ❑ Beck's (1)
- ❑ Dow AgroSciences (Mycogen) (2)
- ❑ DuPont (Pioneer) (3)
- ❑ Land O' Lakes (4)
- ❑ Limagrain/ AgReliant (LG, Great Lakes) (9)
- ❑ Monsanto (Dekalb, Channel, Fontanelle) (5)
- ❑ Syngenta (NK, Golden Harvest) (6)
- ❑ none of the above (7)
- ❑ other (8) _____

Q13 How do you receive information about corn products? (mark all that apply)
- ❑ Seed Corporations (1)
- ❑ Email (2)
- ❑ Postal Mail (3)
- ❑ Other farmers (4)
- ❑ Phone (5)
- ❑ Sales representative (6)
- ❑ Social Media (7)
- ❑ Field days (8)
- ❑ Extension Service (9)
- ❑ Seed Consultants (10)
- ❑ other (11) _____

Q14 What methods do you prefer to receive information about corn products from seed corporations? (mark all that apply)

- ❑ Email (1)
- ❑ Postal Mail (2)
- ❑ Packages (3)
- ❑ Phone (4)
- ❑ Sales representative (5)
- ❑ none (6)
- ❑ other (7) _____

Q15 Indicate the amount each factor influences your level of trust with seed companies.

_____ Sales Representative (1)
_____ Agronomist (2)
_____ Brand name (3)
_____ Farmer dealer (4)
_____ Advertisements (5)
_____ Media (6)
_____ Universities (8)
_____ Other (7)

Q16 Indicate the amount each factor influences your purchase decision of corn seed.

_____ Ability to yield (1)
_____ Traits (2)
_____ Brand (3)
_____ Seed quality (4)
_____ Relationship with Sales representative (5)
_____ Seed Consultant (6)
_____ Advertisements (7)
_____ Other farmers (8)
_____ Lending Institutions (9)
_____ Price (11)
_____ Return Policy (12)
_____ Other (10)

Q17 Where do your sources of trust toward seed companies come from? (rank each item by dragging with mouse)

_____ Social Media (1)
_____ Sales representative (2)
_____ News sources (3)
_____ Peers (4)
_____ Seed Consultants (5)
_____ Lending Institutions (6)
_____ Advertisements (7)
_____ University Trials (8)

Q18 When you make a decision to purchase corn seed, what is the biggest factors you use in purchasing? (rank each item by dragging with mouse)

_____ Yield (1)
_____ Quality (2)
_____ Relationship with Sales representative (3)
_____ Seed Traits (4)
_____ Brand (5)
_____ Price (6)
_____ Return Policy (7)

Q19 Please select the appropriate option for each statement that closely describes your opinion for your operation toward seed corporations.

	Strongly Disagree (1)	Disagree (2)	Slightly Disagree (3)	Neither Agree nor Disagree (4)	Slightly Agree (5)	Agree (6)	Strongly Agree (7)
1. We think the people in seed corporations are fair in their negotiations with us. (1)	❍	❍	❍	❍	❍	❍	❍
2. We think that seed corporations fairly represents their capabilities. (2)	❍	❍	❍	❍	❍	❍	❍
3. We intend to monitor changes in situations because seed corporations will take advantage of such changes. (3)	❍	❍	❍	❍	❍	❍	❍
4. We feel that seed corporations take advantage of our operation. (4)	❍	❍	❍	❍	❍	❍	❍

5. We feel that seed corporations take advantage of us. (5)	❍	❍	❍	❍	❍	❍	❍
6. We intend to check whether seed corporation meets it's obligations to our operation. (6)	❍	❍	❍	❍	❍	❍	❍
7. We think seed corporations misrepresent it's demands during negotiations. (7)	❍	❍	❍	❍	❍	❍	❍
8. We think that the people in seed corporations manipulate others to gain a personal advantage. (8)	❍	❍	❍	❍	❍	❍	❍
9. We think seed corporations keep commitments. (9)	❍	❍	❍	❍	❍	❍	❍
10. We plan to monitor	❍	❍	❍	❍	❍	❍	❍

seed corporation's compliance with our agreement. (10)							
11. We think seed corporations misrepresents it's capabilities in negations. (11)	❍	❍	❍	❍	❍	❍	❍
12. We intend to monitor seed corporations closely so that they do not take advantage of us. (12)	❍	❍	❍	❍	❍	❍	❍
13. We think that seed corporations take advantage of ambiguous situations. (13)	❍	❍	❍	❍	❍	❍	❍
14. We think seed corporations behave according to their commitments. (14)	❍	❍	❍	❍	❍	❍	❍
15. We feel	❍	❍	❍	❍	❍	❍	❍

we can depend on seed corporations to negotiate with us honestly. (15)							
16. We think seed corporations try to take advantage of us. (16)	❍	❍	❍	❍	❍	❍	❍
17. We intend to negotiate cautiously with seed corporations. (17)	❍	❍	❍	❍	❍	❍	❍
18. We feel we can depend on seed corporations to move our joint projects forward. (18)	❍	❍	❍	❍	❍	❍	❍
19. We think that the people in seed corporations use confidential information to their own advantage. (19)	❍	❍	❍	❍	❍	❍	❍
20. We think that seed	❍	❍	❍	❍	❍	❍	❍

corporations take advantage of a changed situation. (20)							
21. We think that seed corporations are dependable. (21)	❍	❍	❍	❍	❍	❍	❍
22. We feel we cannot depend on seed corporations to fulfill their commitments to us. (22)	❍	❍	❍	❍	❍	❍	❍

Q20 Please select the appropriate option for each statement that closely describes your opinion for your operation toward seed corporations.

	Strongly Disagree (1)	Disagree (2)	Slightly Disagree (3)	Neither Agree nor Disagree (4)	Slightly Agree (5)	Agree (6)	Strongly Agree (7)
23. We don't plan to check on seed corporations. (1)	❍	❍	❍	❍	❍	❍	❍
24. We intend to check on seed corporation's progress with our	❍	❍	❍	❍	❍	❍	❍

project. (2)							
25. We think that seed corporations negotiates agreements fairly. (3)	❍	❍	❍	❍	❍	❍	❍
26. We intend to question seed corporation's statements regarding their capabilities. (4)	❍	❍	❍	❍	❍	❍	❍
27. We intend to watch for misleading information from seed corporations in our negotiations. (5)	❍	❍	❍	❍	❍	❍	❍
28. We intend to misrepresent our capabilities in negations with seed corporations. (6)	❍	❍	❍	❍	❍	❍	❍
29. We feel that seed corporations are straight	❍	❍	❍	❍	❍	❍	❍

with us. (7)							
30. We think the people in seed corporations tell the truth in negations. (8)	❍	❍	❍	❍	❍	❍	❍
31. We think that seed corporations meet their negotiated obligations to our operation. (9)	❍	❍	❍	❍	❍	❍	❍
32. In our opinion, seed corporations are reliable. (10)	❍	❍	❍	❍	❍	❍	❍
33. We think the people in seed corporations keep their promises. (11)	❍	❍	❍	❍	❍	❍	❍
34. We worry about the success of joint projects with seed corporations. (12)	❍	❍	❍	❍	❍	❍	❍
35. We think	❍	❍	❍	❍	❍	❍	❍

that the people in seed corporations succeed by stepping on other people. (13)							
36. We think seed corporations keep the spirit of the agreement. (14)	❍	❍	❍	❍	❍	❍	❍
37. We think seed corporations negotiates with us honestly. (15)	❍	❍	❍	❍	❍	❍	❍
38. We feel that seed corporations try to get the upper hand. (16)	❍	❍	❍	❍	❍	❍	❍
39. We think that seed corporations takes advantage of our problems. (17)	❍	❍	❍	❍	❍	❍	❍
40. We feel that seed corporations negotiates	❍	❍	❍	❍	❍	❍	❍

with us honestly. (18)							
41. We think that seed corporations take advantage of our weaknesses. (19)	❍	❍	❍	❍	❍	❍	❍
42. We feel that seed corporations will keep its word. (20)	❍	❍	❍	❍	❍	❍	❍

Q21 Please select the appropriate option for each statement that closely describes your opinion for your operation toward seed corporations.

	Strongly Disagree (1)	Disagree (2)	Slightly Disagree (3)	Neither Agree nor Disagree (4)	Slightly Agree (5)	Agree (6)	Strongly Agree (7)
43. We feel confident that seed corporation won't take advantage of us (20)	❍	❍	❍	❍	❍	❍	❍
44. We feel comfortable about seed corporation's willingness to stick to a schedule. (1)	❍	❍	❍	❍	❍	❍	❍

45. We think seed corporations are open in describing their strengths and weakness in negotiating joint projects. (2)	❍	❍	❍	❍	❍	❍	❍
46. We think seed corporations negotiates realistically. (3)	❍	❍	❍	❍	❍	❍	❍
47. We think seed corporations do not mislead us. (4)	❍	❍	❍	❍	❍	❍	❍
48. We intend to speak openly in our negotiations with seed corporations. (5)	❍	❍	❍	❍	❍	❍	❍
49. We think that people in seed corporations interpret ambiguous information in their own favor. (6)	❍	❍	❍	❍	❍	❍	❍
50. We intend	❍	❍	❍	❍	❍	❍	❍

to check on the reasoning given by seed corporations during negotiations. (7)							
51. We intend to monitor seed corporation's behavior for timeliness. (8)	❍	❍	❍	❍	❍	❍	❍
52. We feel that seed corporations try to get out of it's commitments . (9)	❍	❍	❍	❍	❍	❍	❍
53. We think that commitments made to our operation will be honored by the people in seed corporations. (10)	❍	❍	❍	❍	❍	❍	❍
54. We feel that seed corporations negotiates joint expectations fairly. (11)	❍	❍	❍	❍	❍	❍	❍
55. We think seed	❍	❍	❍	❍	❍	❍	❍

corporations let us down. (12)							
56. We worry about seed corporation's commitment to agreed upon goals (13)	❍	❍	❍	❍	❍	❍	❍
57. We intend to work openly with seed corporations because they will not take advantage of us. (14)	❍	❍	❍	❍	❍	❍	❍
58. We intend to share information cautiously with seed corporations to avoid having them use it to their advantage. (15)	❍	❍	❍	❍	❍	❍	❍
59. We plan to share information openly with seed corporations because they do not take advantage of us. (16)	❍	❍	❍	❍	❍	❍	❍

60. We plan to document all aspects of our negotiations with seed corporations. (17)	❍	❍	❍	❍	❍	❍	❍
61. We intend to check seed corporation's actions to avoid being taken advantage of. (18)	❍	❍	❍	❍	❍	❍	❍
62. We feel that seed corporations take advantage of people who are vulnerable. (19)	❍	❍	❍	❍	❍	❍	❍

APPENDIX B

INSTRUMENT PERMISSION

On November 12, 2014, I received a phone call at 12:00pm from Dr. Philip Bromiley in response to a previous message I left on his voicemail. Dr. Bromiley granted me permission to use his "Organizational Trust Inventory" for my research, and allowed me permission to adapt the inventory to my style of research. Dr. Bromiley's contact information is listed below:

Dr. Philip Bromiley
Dean's Professor in Strategic Management
University of California- Irvine
The Paul Merage School of Business
(949)-824-6657
bromiley@uci.edu

APPENDIX C

CONSENT AND INFORMATION SHEET

Project Title: CORN GRAIN PRODUCERS PERCEPTIONS OF TRUST TOWARDS SEED PRODUCING CORPORATIONS

You are invited to take part in a research study being conducted by James Sledd, a researcher from Texas A&M University. The information in this form is provided to help you decide whether or not to take part. If you decide you do not want to participate, there will be no penalty to you, and you will not lose any benefits you normally would have.

Why Is This Study Being Done?
The purpose of this study is to examine the perceptions of corn grain producers toward the information they receive from seed producing corporations. This data will allow seed producing corporations to understand how producers value the information they receive and continue to bridge the relationship between these corporations and the producers. The objectives include:
1. Determine corn producers' levels of trust of seed producing corporations,
2. Describe how information is received by producers from seed producing corporations,
3. Describe how corn producers prefer to receive information from seed producing corporations.
4. Describe relationships between specific characteristics of corn grain producers and their levels of trust of seed producing corporations

Why Am I Being Asked To Be In This Study?
You are being asked to be in this study because you are a current member of the National Corn Growers Association which has partnered with Texas A&M University to conduct the research.

How Many People Will Be Asked To Be In This Study?
Approximately 600 individuals will be invited to participate in this study.

What Are the Alternatives to being in this study?
No, the alternative to being in the study is not to participate.

What Will I Be Asked To Do In This Study?

You will be asked to complete an online survey that will be emailed directly to you. Your participation in this study will last up to 15- 20 minutes.

Are There Any Risks To Me?
The things that you will be doing are no more/greater risks than you would come across in everyday life.

Will There Be Any Costs To Me?
Aside from your time, there are no costs for taking part in the study.

Will I Be Paid To Be In This Study?
You will not be paid for being in this study/

Will Information From This Study Be Kept Private?
The records of this study will be kept private. No identifiers linking you to this study will be included in any sort of report that might be published. Research records will be stored securely and only the Principal Investigator will have access to the records.

Information about you will be stored in computer files protected with password protection. This consent form will be filed securely in an official area.

People who have access to your information include the Principal Investigator and research study personnel. Representatives of regulatory agencies such as the Office of Human Research Protections (OHRP) and entities such as the Texas A&M University Human Subjects Protection Program may access your records to make sure the study is being run correctly and that information is collected properly.

Information about you and related to this study will be kept confidential to the extent permitted or required by law.

Who may I Contact for More Information?
You may contact the Principal Investigator, Dr. Summer Odom PhD to tell her about a concern or complaint about this research at 979-862-7650 or Summer.Odom@agnet.tamu.edu. You may also contact the Protocol Director, James Sledd at 270-564-9678 or James.Sledd@ag.tamu.edu.

For questions about your rights as a research participant; or if you have questions, complaints, or concerns about the research, you may call the Texas A&M University Human Subjects Protection Program office at (979) 458-4067 or irb@tamu.edu.

What if I Change My Mind About Participating?
This research is voluntary and you have the choice whether or not to be in this research study. You may decide to not begin or to stop participating at any time. If you choose not to be in

this study or stop being in the study, there will be no effect on your relationship with Texas A&M University and National Corn Growers Association. Any new information discovered about the research will be provided to you. This information could affect your willingness to continue your participation.

By participating in completing the survey, you are giving permission for the investigator to use your information for research purposes.

Thank you.

James Sledd

APPENDIX D

COOPERATION AGREEMENT

James Sledd
Graduate Assistant
Texas A&M University

Mr. Sledd,

This letter is to confirm that the National Corn Growers Association (NCGA) is willing to work with you on your research project on biotechnology acceptance. As the Director of Biotechnology and Economic Analysis, I see value in this research for the industry and would like to see it succeed.

Sincerely,

Nathan Fields
Dir. Biotechnology and Economic Analysis
National Corn Growers Association

WWW.NCGA.COM

NATIONAL OFFICE
632 Cepi Dr.
Chesterfield, MO 63005
(636) 733-9004
Fax: (636) 733-9005

WASHINGTON, DC OFFICE
20 F Street NW, Suite 600
Washington, DC 20001
(202) 628-7001
Fax: (202) 628-1933

APPENDIX E

APPROVAL FOR STUDY

DIVISION OF RESEARCH

Research Compliance and Biosafety

TEXAS A&M UNIVERSITY

DATE: January 29, 2015

MEMORANDUM

TO: Summer F Felton Odom
ALRSRCH - Agrilife Research - Ag Leadership, Education & Communication

FROM: Dr. James Fluckey
Chair
Institutional Review Board

SUBJECT: Expedited Approval

Study Number: IRB2014-0779D

Title: CORN GRAIN PRODUCERS PERCEPTIONS OF TRUST TOWARDS SEED PRODUCING CORPORATIONS

Approval Date: 01/29/2015

Continuing Review Due: 12/15/2015

Expiration Date: 01/15/2016

Documents Reviewed and Approved:

Submission Components			
Study Document			
Title	Version Number	Version Date	Outcome
Proposal- James Sledd_UPDATED	Version 1.0	01/26/2015	Approved
Permission	Version 1.0	01/26/2015	Approved
James Sledd confirmation letter	Version 1.0	01/26/2015	Approved
Corn_Producers_Surevy	Version 1.0	01/26/2015	Approved
Consent - Information Sheet 04-17-12	Version 1.0	01/26/2015	Approved

Document of Consent: Waiver approved under 45 CFR 46.117 (c) 1 or 2/ 21 CFR 56.109 (c)1

Comments: This study was approved.

This research project has been approved. As principal investigator, you assume the following responsibilities:

1. **Continuing Review:** The protocol must be renewed by the expiration date in order to continue with the research project. A Continuing Review application along with required documents must be submitted by the continuing review deadline. Failure to do so may result in processing delays, study termination, and/or loss of funding.

750 Agronomy Road, Suite 2701
1186 TAMU
College Station, TX 77843-1186
Tel. 979.458.1467 Fax. 979.862.3176
http://rcb.tamu.edu

2. **Completion Report:** Upon completion of the research project (including data analysis and final written papers), a Completion Report must be submitted to the IRB.
3. **Unanticipated Problems and Adverse Events:** Unanticipated problems and adverse events must be reported to the IRB immediately.
4. **Reports of Potential Non-compliance:** Potential non-compliance, including deviations from protocol and violations, must be reported to the IRB office immediately.
5. **Amendments:** Changes to the protocol must be requested by submitting an Amendment to the IRB for review. The Amendment must be approved by the IRB before being implemented.
6. **Consent Forms:** When using a consent form or information sheet, you must use the IRB stamped approved version. Please log into iRIS to download your stamped approved version of the consenting instruments. If you are unable to locate the stamped version in iRIS, please contact the office.
7. **Audit:** Your protocol may be subject to audit by the Human Subjects Post Approval Monitor. During the life of the study please review and document study progress using the PI self-assessment found on the RCB website as a method of preparation for the potential audit. Investigators are responsible for maintaining complete and accurate study records and making them available for inspection. Investigators are encouraged to request a pre-initiation site visit with the Post Approval Monitor. These visits are designed to help ensure that all necessary documents are approved and in order prior to initiating the study and to help investigators maintain compliance.
8. **Recruitment**: All approved recruitment materials will be stamped electronically by the HSPP staff and available for download from iRIS. These IRB-stamped approved documents from iRIS must be used for recruitment. For materials that are distributed to potential participants electronically and for which you can only feasibly use the approved text rather than the stamped document, the study's IRB Protocol number, approval date, and expiration dates must be included in the following format: TAMU IRB#20XX-XXXX Approved: XX/XX/XXXX Expiration Date: XX/XX/XXXX.
9. **FERPA and PPRA:** Investigators conducting research with students must have appropriate approvals from the FERPA administrator at the institution where the research will be conducted in accordance with the Family Education Rights and Privacy Act (FERPA). The Protection of Pupil Rights Amendment (PPRA) protects the rights of parents in students ensuring that written parental consent is required for participation in surveys, analysis, or evaluation that ask questions falling into categories of protected information.
10. **Food:** Any use of food in the conduct of human subjects research must follow Texas A&M University Standard Administrative Procedure 24.01.01.M4.02.
11. **Payments:** Any use of payments to human subjects must follow Texas A&M University Standard Administrative Procedure 21.01.99.M0.03.

This electronic document provides notification of the review results by the Institutional Review Board.

APPENDIX F

EXAMPLE OF NEWSLETTER

News from the Nebraska Corn Growers Association
Your Eyes and Ears

March 13, 2015

NeCGA Calendar of Events

COMMODITY CLASSIC REACHES NEW HEIGHTS IN 2015 Growers

NCGA Leadership Application 2015-2016

FARMLAND Documentary Debuting on DVD

Make Sure You Dial 811 Before You Dig

Want to avoid spending a day in the dark? Or being without heat for your home? What about not being able to connect to the internet, email or social media? Preventing these issues may be as simple as 8-1-1.

Excavations can damage the underground utilities we all rely on every day. Avoid excavation related utility damages by calling 811 from anywhere in the country. Any type of digging requires a call to 811 a few days prior to your digging project whether it is a large or small project. Your call to 811 will be routed to your local One Call center. The center's customer service representative will take down vital information about your project such as where you're planning to dig and what type of work you will be doing. Then they will notify the local underground utility operators to come mark their facilities. Within a few days a locate representative will have marked the approximate location of the underground lines, pipes and cables so you'll know what's below and you will be able to dig safely. The call and the service are FREE!

Besides normal farming operations, farmers and ranchers are not exempt in making notifications to the One Call center while conducting a variety of farm related excavations. Farmers and their contractors are required to call 811 prior to digging projects, examples include: installing drain tile, building terraces, chisel plowing, sub-soiling, deep ripping, building waterways, drilling wells, building holding ponds and installing fence posts to name a few.

In fact, several states have laws that require notifying the One Call center whenever the digging project goes deeper than a specified number of inches. Be sure you know the requirements of your state law.

Okay... so now you have called 811 before digging, by now locate representatives, possibly from multiple companies, have been to your dig site to mark the approximate location of the underground utility lines. Check the area before proceeding with your project. If an underground utility operator has not responded or if underground facilities are clearly present and not marked, call your state One Call center again to have the area marked properly.

When digging, make sure to always carefully hand dig around the marks. Some utility lines may be buried at a shallow depth and even a misplaced shovel thrust can bring you right back to square one - facing potentially dangerous and/or costly consequences. For those bigger projects around large pipelines, make sure you have a pipeline representative present while you dig.

Don't forget that erosion, land movement, root structure growth or other factors may affect the amount of dirt surrounding the underground utility. So remember to call each time you are planning a digging job. Safe digging is no accident.

Now that you've made the smart call to 811 and protected yourself, your family and community, make sure to spread the word about 811.

Attention: Nebraska Corn Growers

A research study is being conducted by Texas A&M University to measure corn producers' trustworthiness towards seed producing corporations. Your response is needed! Click on the link below find out more and to complete the survey. It should not take longer than 15- 20 minutes to complete.

http://tamuag.az1.qualtrics.com/SE/?SID=SV_0jhecWrUPAZi0lt

NCGA Leadership Academy

Attached to this weeks weekly update, you will find an application for

the NCGA Leadership Academy, a program of Syngenta's Leadership at it's Best. Any grower member is eligible to apply for this program.

Phase I of Leadership will be held August 10 - 14, 2015 in Minneapolis, MN and Phase II will be held January 24 - 27, 2016 in Washington, DC. For almost three decades, this NCGA/Syngenta-sponsored program boasts an impressive record of developing exceptional leaders for state grower associations, checkoff boards, and the national association.

Applications are due to NCGA by April 10, 2015.

The mission of the Nebraska Corn Growers Association is to create and increase opportunities for corn farmers through advocacy, education and leadership development.