Examining the use of social media applications by West Virginia agriculture producers

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Examining the use of social media applications by West Virginia agricultural producers

Mikayla Hargis

Thesis submitted to the Davis College of Agriculture, Natural Resources, and Design at West Virginia University

in partial fulfillment of the requirements for the degree of Master of Science in Agricultural & Extension Education

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Morgantown, West Virginia
2023

Keywords: social media, agriculture producers, mixed methods, adoption

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ABSTRACT

Examining the use of social media applications by West Virginia agriculture producers

Mikayla Hargis

Social media has become part of the typical individual’s everyday routine, with no exception to those in the agricultural industry. The purpose of this study was to examine social media usage by West Virginia agricultural producers. The population for this study consisted of agricultural producers in West Virginia. The study yielded 44 responses from those who attended the 2022 West Virginia Farm Bureau meeting. An explanatory sequential design methodology was employed for this study. After the initial quantitative phase, a qualitative phase was conducted with producers who use social media in their operations. Based on the results, there is much variation in the use of social media among agricultural producers in West Virginia. Results also described the willingness to adopt social media, the barriers of adoption, and the perceived characteristics of social media, as denoted in Rogers (2003).
Dedication

This thesis is dedicated to my middle and high school agriculture teachers, Mr. Jim Lawson, Mr. Mitch Fincham, Mr. Jeremy Greene, Mrs. Charity Marstiller, and Michael Withrow. You all inspired me to pursue a career in the agriculture industry. Without your support then and your continued support throughout my studies, I would not be where I am today. Thank you for everything.
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encouragement guided me through some of the toughest times. I cannot thank you enough for all that you have done for me the last two years. I am proud to call you my advisor, friend, and role model.

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Chapter 1. Introduction

Social media has become a part of the typical individual’s everyday routine. A Pew Research Center (2021) study reported that 72% of Americans use some form of social media. Furthermore, seven-in-ten Facebook users and six-in-ten Instagram users reported visiting these sites at least once a day (Pew Research Center, 2021). Other popular social media platforms include Twitter, YouTube, Pinterest, TikTok, and Snapchat. These typically free, internet applications allow for the creation and exchange of information among users (Kaplan & Haenlein, 2010). This exchange of information can be done by creating and sharing posts, sending direct messages, and interacting with others by reacting or commenting on their posts.

Social media is a primary source for information-seeking behavior among individuals (Osatuyi, 2013). Because of this behavior, businesses and organizations have implemented social media to communicate with their customers (Osatuyi, 2013). Social media reaches more people at quicker rates than previous communication media have allowed (Cui, 2014). An increasing number of agriculturists are using social media tools to send information and educate the public about agriculture (Allen et al., 2010; Rodriguez, 2009). The adoption of technology to communicate with consumers and inform them of products and services can change their overall perception of the agricultural industry (Martin & Matlay, 2003). Rapp et al. (2013) found that social media
continues to change how businesses communicate across distribution channels and with customers, including the agricultural industry. The value in agriculturists using social media brings more transparency, engagement, trust, and authenticity to the industry (Stanley, 2013), enabling the creation of new relationships with consumers using social media platforms (White et al., 2014). Information provided by agriculturists could help consumers gain a better understanding of how their food is produced, eliminate myths about agricultural practices, and combat negative perceptions of agriculture, ultimately bridging the gap between farmers and consumers (Allen et al., 2010).

Using social media can offer an opportunity to reach customers who are not always accessible (Pechrov’a et al., 2015). Though the positive outcomes of social media usage in agricultural operations are evident, there may be some hesitation in adoption due to farmers’ lack of familiarity with social media (Pechrov’a et al., 2015). With the increasing number of consumers utilizing social media to identify, research, and buy local foods, food producers can ultimately benefit from social media marketing and developing a relationship with consumers (Cui, 2014).

Need for Study

According to the USDA-Economic Research Service, 1.4% of the U.S. population accounted for direct on-farm employment (2022). It is clear that there is a growing disconnect between those involved in agriculture and the general population (Irani & Doerfert, 2013). Because of this, it is vital for U.S. agriculturists to understand consumers’ public knowledge and opinions on agriculture (Elliot, 1999), which can be accomplished using social media platforms. These platforms will also allow agriculturists
to have a voice and gain networking opportunities with the intended audience (Morris & James, 2017). In addition to communicating with consumers, using social media is practically considered free marketing for any business (Kaplan & Haenlein, 2010). It allows businesses to connect with consumers and advertise their products.

The need for innovation and technology adoption is apparent; however, this is an area where agriculture has been laggard (Barrett et al., 2010). Agriculturists are not necessarily against participating in social media, but they may not understand the advantages and benefits of utilizing social media to promote their operation (Baumgarten, 2012). In a study conducted by White et al. (2014), the researchers explored the use of social media for agri-marketing efforts throughout Texas. Overall, the participants were motivated to use social media because of personal experiences with negative information being shared about agriculture (White et al., 2014). Though the use of social media requires practice and learning, the participants agreed that with their other duties, they were able to maintain their presence on social media (White et al., 2014).

Morris and James (2017) examined United Kingdom (UK) farmers' use of and attitudes towards social media. The qualitative data collected showed an overall positive attitude towards social media, especially among younger farmers (Morris & James, 2017). The average age of the UK farmer is 58 years old, which may affect their willingness to integrate social media into their operation if they are unfamiliar with this concept (Morris & James, 2017). Similar studies have been conducted on the utilization and perceptions of social media by individuals and organizations associated with the agriculture industry (Bowen, 2012; Bowman et. al, 2014; Daigle & Hess, 2021; Rhoades
& Aue, 2010). However, there is a lack of research behind the barriers of social media usage by individuals and organizations within the agriculture industry.

**Problem Statement**

The state of West Virginia has approximately 22,300 agricultural operations (USDA-National Agricultural Statistics Services (NASS), 2021). A substantial majority (80%) of these farms generate income of less than $10,000 (NASDA, n.d.). 98% of West Virginia farms are family owned and operated (USDA-NASS, 2017). The USDA-NASS reported data relating to internet access on West Virginia farms. In 2021, 73% of farms had internet access, which is just below the national rate at 82%. The state continues to promote local foods, farmers markets, and other agricultural attractions through the West Virginia Agritourism initiative in order to increase income and preserve the rural heritage within West Virginia (West Virginia Department of Agriculture (WVDA), 2020). With this new initiative and the increasing need to communicate with consumers, it seems West Virginia agricultural producers should utilize social media, however, there is no research or data currently available on social media adoption or rejection by agricultural producers in the state.

**Purpose & Objectives**

The purpose of this study was to examine the usage of social media by West Virginia agricultural producers. The following objectives guided the study:

1. Describe the willingness to adopt social media by West Virginia agricultural producers [QUANT];
2. Describe the utilization of social media by West Virginia agricultural producers [QUANT/QUAL];

3. Describe the perceived characteristics of social media, according to Rogers (2003), by West Virginia agricultural producers [QUANT/QUAL]; and

4. Describe the barrier(s) of implementing social media by West Virginia agricultural producers [QUAL].

Theoretical Framework

Diffusion, defined by Rogers (2003), is “the process by which an innovation is communicated through certain channels over time among the members of a social system” (p.5). By using the Diffusion of Innovation theory, we can see the level and rates of adoption of social media usage into an agricultural operation examining several factors that could affect adoption or rejection of the innovation.

Rogers (2003) depicted a model of the Innovation-Decision Process which illustrates the process of an individual’s decision of an innovation over time with a series of actions. Rogers (2003) described these five stages of the model:

1. “Knowledge occurs when an individual is exposed to an innovation and understands how it functions.

2. Persuasion occurs when an individual forms a favorable or unfavorable attitude towards the innovation.

3. Decision takes place when an individual engages in activities that lead to a choice to adopt or reject the innovation.
4. Implementation occurs when an individual puts a new idea to use.

5. Confirmation takes place when the individual seeks reinforcement of an innovation-decision already made, but he or she may reverse this previous decision if exposed to conflicting messages about the innovation” (p. 169).

Under the second stage of the Innovation-Decision Process Model, Rogers (2003) listed five perceived characteristics of the specific innovation: (1) Relative Advantage, (2) Compatibility, (3) Complexity, (4) Trialability, and (5) Observability. These five attributes affect the adoption decision by the individual and will lead to their decision to adopt or reject an innovation (Rogers, 2003). It’s important to note that these characteristics are based on the perceptions of the innovation itself, and not the use of the innovation (Rogers, 2003).

Before social media, communication technologies included the use of computers and e-mails. During this initial phase of related research, a 1994 study of 471 managers in the U.S. found that computer anxiety was the main barrier to adoption and use of personal computers (Igbaria, et al.). Rogers (2003) stated that just providing the computer to employees is unlikely to result in use unless training is provided. Since then, a plethora of studies have been conducted on the use of communication technology. In fact, 15% of diffusion scholarly publications focus on the subject of communication (Rogers, 2003). In more recent years, Meyers et al. (2014) found similar findings with aspects of social media tools used by agricultural producers. This study found that agriculturists felt more confident and competent with the beginning aspects of communication tools, like setting
up a Facebook page. On the other hand, they felt less confident with more difficult aspects, which could affect their adoption rate.

**Definition of Terms**

The following terms are operationally defined and outlined in the literature.

**Agricultural Producer** - Persons or entities, including farmers, ranchers, loggers, agricultural harvesters, and fishermen, that engage in the production or harvesting of an agricultural product. Producers may or may not own the land or other production resources but must have majority ownership interest in the agricultural product to which Value-Added is to accrue as a result of the project (USDA, Rural Business-Cooperative Services, n.d.).

**Social Media** - “a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of User Generated Content” (Kaplan and Haenlein, 2010, p. 21).

The following definitions are the five perceived attributes of an innovation as denoted in *Diffusion of Innovations* (Rogers, 2003).

**Relative Advantage** - “the degree to which an innovation is perceived as being better than the idea it supersedes” (Rogers, 2003, p. 15).

**Compatibility** - “the degree to which an innovation is perceived as consistent with the existing values, past experiences and needs of potential adopters” (Rogers, 2003, p. 15).

**Complexity** - “the degree to which an innovation is perceived as relatively difficult to understand and use” (Rogers, 2003, p. 16).
**Trialability** - “the degree to which an innovation may be experimented with on a limited basis” (Rogers, 2003, p. 16).

**Observability** - “the degree to which the results of an innovation are visible to others” (Rogers, 2003, p. 16).

The following terms are defined by Moore and Benbasat (1996) to help define observability of an innovation through the development of their instrument. This instrument was utilized because it measured how individuals perceived the computer workstations, which relates to social media usage in the present day.

**Result Demonstrability** - “the degree to which the results of using an innovation is observable and communicable to others” (Moore & Benbasat, 1996, p. 137).

**Assumptions and Limitations**

The main assumption for this study is that there are fewer agriculturists in West Virginia who use social media in their operations. I am examining those who do use social media and those would be willing to incorporate it into their operations. Another assumption of this study would be that those who are willing to implement social media into their operation are those who are active themselves or will use someone else to run the pages. Finally, the last assumption would be that all participants are honest and are engaged while taking the survey and participating in the interviews.

The limitation of this study is that the information may lack generalizability. Surveys were administered at the 2022 West Virginia Farm Bureau conference, which allowed accessibility to a large group of producers, but will not be generalizable to the agricultural producers across the state. Because the data being collected is from a specific
state, the phenomena lived may be hard to generalize to other regions and states. Another limitation to this study is that there is no current knowledge of research relating to agricultural communications and social media usage in West Virginia agricultural enterprises.

**Summary of Chapter 1**

Social media has taken over the everyday lives of individuals. Businesses have taken to social media to reach a larger audience, communicate with consumers, and market their products. Agricultural operations across the nation have benefitted too from the implementation of social media for business purposes. The West Virginia Agritourism initiative was recently launched in 2019 to increase revenue and travel to the state. With this initiative and the impact social media has on society, this study sought to explore the use of social media by West Virginia agricultural producers.
Chapter 2. Review of Literature

Social Media

The term “social media” was coined with the creation of Myspace in 2003, and Facebook in 2004 (Kaplan & Haenlein, 2009). Both began as a way for individuals to connect and communicate with one another through the internet. Social media is sometimes referred to as Web 2.0, or user-generated content (UGC), however, these three terms are used interchangeably (Kaplan & Haenlein, 2009). Social media encompasses various forms of internet services including blogs, wikis, social networking sites, status-updates services, virtual world content, and media sharing sites (Kaplan & Haenlein, 2009). Users can create their own content; in fact, Facebook users create, on average, 90 pieces of content each month (Facebook, 2011).

Social media’s accessibility makes it easy for users to connect anytime and anywhere (Parcell, 2013). Mobile social media applications make this possible with the platforms practically at the fingertips of users. A Pew Research Center (2021) study indicated that 81% of adults reported using YouTube, a video sharing platform, and 69% of adults use Facebook, a social networking application. Other platforms such as Instagram, Snapchat, and TikTok have a strong presence from young adults ages 18-29 (Pew Research Center, 2021). Social media capitalizes on connections, therefore building a network of individuals who share something in common (Telg & Barnes, 2012).
Social networking platforms have also become a way for consumers to communicate, search for information, advertise, and form opinions about various products and services (Mangold & Faulds, 2009). Businesses and organizations have recognized this shift in society and have started incorporating social media into their marketing strategies (Mangold & Faulds, 2009).

**Social Media Usage in Organizations & Businesses**

Platforms such as Instagram, Facebook, and Twitter have been acknowledged as an affordable way for businesses to develop and maintain relationships with customers, receive referrals, and increase profits (Jones et al., 2015; Schaupp & Belganger, 2014). Hylbak (2013) found that small businesses who utilize various social media sites to build their brand had an increase in new customers.

An active social media presence involves managing, updating, and curating content. Businesses that have social media but do not maintain their active presence by posting, connecting with consumers, and advertising their products, will not have a return on investment (ROI) from social media (Geho, 2012). In a study conducted by Webb and Roberts (2016), small businesses utilizing social media to communicate with their customers agreed that social media is advantageous to their company’s reputation and helped increase business sales. Though there are many benefits to using social media, research has revealed only 62% of businesses monitor their brand or company name on social media sites (Barnes, et al., 2013). Each platform offers a variety of analytics for monitoring, such as page likes, interaction with posts, and engagement with pages (King, 2015).
Social Media Usage in Agricultural Businesses

With the increasing number of consumers utilizing social media to identify, research, and buy local foods, agricultural producers can ultimately benefit from social media marketing and developing a relationship with consumers (Cui, 2014). Small rural retail businesses have adopted social media to communicate with consumers and promote products but are apprehensive about the financial effectiveness (Son et al., 2019).

In addition to marketing for their products, agricultural producers also have the opportunity to interact, promote, and advocate for agriculture using social media (Meyers et al., 2014). White (2014) found that of the Texas agricultural producers examined, they were utilizing social media mainly to combat negative perceptions of the agriculture industry. The value in agriculturists using social media brings more transparency, engagement, trust, and authenticity to the industry (Stanley, 2013).

Direct-to-consumer marketing is a common marketing strategy in which producers sell directly to consumers, avoiding retailers. In fact, consumers find this marketing strategy appealing because it’s from local producers and can meet their personal needs (Brown, 2020). Using the internet specifically for direct-to-consumer marketing had positive impacts for both producers and consumers (Ahearn, 2018).

The vast majority of agriculture’s audience is located on social media (Seger, 2011). Agriculture companies must evolve to keep up with the demands of current technologies in society and audiences (Seger, 2011), however, the use of social media by agriculturalists tends to be an extension of their knowledge of personal usage.
Barriers to Implementing Social Media

Though there are positive outcomes of social media usage in agribusinesses, there may be some hesitation in adoption due to farmers’ lack of familiarity with social media (Pechrov’a et al., 2015). Research has shown that younger adults are more likely to use social media than older adults (Shearer, 2020). Carroll et al. (2022) found that Extension Service clientele under the age of 50 indicated the most effective communication channels were the internet and social media, whereas word of mouth and newspaper were the preferred channels for clientele 50 and over. In 2017, the average age of the U.S. farm producer was 57.5, an increase from 2012 (USDA-NASS, 2017). While farmers may have experience using social media for personal purposes, they may not have experience using it for business purposes (Moreno-Ortiz, et al., 2021).

In 2017, a series of focus groups was conducted and included members of the Florida Farm Bureau Federation. The findings showed that within the first focus group, the members recognized a need for a social media presence by the Farm Bureau but did not express a level of comfort of using social media themselves (Telg & Barnes, 2017). On the contrary, members of the second focus group used social media as a part of their everyday routines and felt comfortable with the platforms (Telg & Barnes, 2017).

Meyers et al. (2014), sought to identify agriculturists’ online communication tool training needs. The findings suggested that the respondents felt most competent in beginning areas of communication tools; for example, creating a Facebook or Twitter page because that is the first step in utilizing those communication tools (Meyers et al., 2014). In addition, the participants of the study indicated the lowest competence rates for
more complex uses of social media, such as engaging with audience members and measuring the impact of the social media pages (Meyers et al., 2014). Additional research should be made knowing how individuals and various groups are adopting social media (Meyers et al., 2014).

**Theoretical Framework**

**Diffusion of Innovations Theory**

“Diffusion is the process in which an innovation is communicated through certain channels over time among the members of a social system” (Rogers, 2003, p. 5) The innovation, communication channels, time, and the social system are the four main elements of Diffusion of Innovations and are often identified in diffusion research. Diffusion can also be a type of communication about a specific innovation. This newness of an idea provides a level of uncertainty among individuals. It is because of this newness and uncertainty that individuals in a social system seek information about innovations.

The innovation-decision process is the process through which an individual progresses from gaining knowledge of an innovation, to forming their perspective on the innovation, to making a decision to adopt or reject, to implementation of the innovation, and to final confirmation of this decision (Rogers, 2003). The idea of the innovation-decision process was originally conceptualized by Ryan and Gross (1943) during a study on Iowa farmers and the adoption of hybrid corn, and which later served as the basis of Rogers’ extensive examination of diffusion theory. In the study, Iowa farmers went through a similar process when deciding whether to adopt the new seed. The farmers learned about the existence of this idea from certain channels of communication, sought
further information regarding the seed, tried out the seed on a few acres, and then later adopted the innovation (Ryan & Gross, 1943). Though not the exact same stages as proposed later by Rogers, the idea emerged that the decision of an innovation was a process, not instantaneous.

The knowledge stage is the first step in the innovation-decision process, which begins when an individual is exposed to a specific innovation and grasps an understanding of how this innovation functions (Rogers, 2003). This stage commences the process for an adoption decision from an individual. The consideration of an innovation does not supersede this stage if an individual does not find this information relevant to their situation, or if adequate knowledge is provided.

The persuasion stage allows the individual to form a favorable or unfavorable attitude toward the innovation. It is during this stage that general perceptions of the innovation are developed, and the perceived attributes emerge. The persuasion stage will ultimately lead to the individual’s adoption or rejection decision, which is consistent with their attitudes formed of the innovation.

The decision stage is an opportunity for the individual to try out the new idea on a partial basis. Most individuals who try out an innovation decide to adopt if the innovation has a certain degree of relative advantage. The complexity and compatibility characteristics are also vital to the adoption of innovations. If the person decides to adopt, they may also choose to reject at a later point, which is known as discontinuance.

It is during the implementation stage that an individual will fully put the new idea into practice. This typically occurs directly following the decision stage. The
confirmation stage is listed as the final stage of the innovation-decision process, but this is not a terminal stage. Individuals will consistently seek reinforcement of their decision, and try to avoid dissonance, but based on their knowledge, attitudes, and actions, they may reverse their adoption decision (Rogers, 2003).

**Perceived Attributes.**

The perceived attributes of an innovation are vital to the rate of adoption (Rogers, 2003). The variance in the rate of adoptions of innovations are often explained by the following five attributes: relative advantage, compatibility, complexity, trialability, and observability. In addition, the nature of communication channels, the social system the innovation is diffusing in, the type of decision made, and the extent of change agents’ efforts all affect the adoption rate.

Relative advantage is the idea that an innovation is perceived as better than a similar concept. There are several types of relative advantage, such as economic and social. Researchers have found that relative advantage is one of the strongest predictors of an innovation’s rate of adoption (Rogers, 2003).

Compatibility is another attribute to adoption of an innovation. If an innovation is perceived as compatible, it is consistent with the individuals' values, experiences, and needs, and reduces the degree of uncertainty of an innovation (Rogers, 2003).

If an innovation is perceived as complex, it is negatively related to an innovation’s rate of adoption. If the innovation is difficult to understand and use by an individual, it could very well be a barrier to adopting the innovation.
Trialability allows the innovation to be experimented on a limited basis. Innovations that are often used on a trial basis are adopted more rapidly than those that are not. Earlier adopters may find trialability more important than late adopters.

Finally, the last attribute as listed in Rogers (2003) is observability, which indicates that an innovation is visible to others. This not only means an individual sees an innovation but has also communicated with other individuals about the innovation.

**Communication Channels.**

Communication channels are the way in which a message gets from a source to the receiver (Rogers, 2003). Rogers (2003) categorized communication channels by interpersonal versus mass media and localite versus cosmopolite. Within these communication channels, individuals create knowledge or can be persuaded to change their attitude about an innovation.

Mass media channels transmit messages through a mass medium, which includes radio, television, newspapers, and other sources. With the ability to reach a large audience quickly, create knowledge, and spread information, mass media channels are relatively important in the knowledge stage of the innovation-decision process (Rogers, 2003).

Interpersonal channels involve a face-to-face exchange between two or more people. These channels are vital in the persuasion stage in the innovation-decision process because they can persuade an individual to form or change their perceptions of an innovation (Rogers, 2003). In a 1958 study conducted by Copp et al., the researchers found that the greatest push out of the knowledge stage was the use of mass media.
channels, while interpersonal channels were notable in moving individuals out of the persuasion stage. In the same study, it was also noted that an inappropriate use of communication channels at the wrong stage was associated with later adoption of an innovation.

Cosmopolite communication channels link an individual with an outside source of the social system (Rogers, 2003). Mass media channels are almost always cosmopolite, whereas interpersonal channels may be local or cosmopolite. Cosmopolite interpersonal channels can include change agents, visits outside a local community, and outside visitors to the local social system (Rogers, 2003). Cosmopolite channels are typically more important at the knowledge stage, and localite channels are more important at the persuasion stage in the innovation-decision process (Rogers, 2003).

Communication via the internet can be either mass media or interpersonal communication. The internet allows individuals to reach a mass audience at once, but also allows for individualized messages to people, which is more like interpersonal channels. The internet has been known to greatly increase the rate of an innovation’s rate of adoption (Rogers, 2003).

**Adopter Categories.**

Rogers (2003) included five adopter categories within *Diffusion of Innovations*: (1) innovators, (2) early adopters, (3) early majority, (4) later majority, and (5) laggards. This categorization is based on an individual’s level of innovativeness, “the degree to which an individual is relatively earlier in adopting new ideas than other members of a system” (Rogers, 2003, p. 297).
Communication channels can differ by the categorization of adopters (Rogers, 2003). For example, mass media channels are more important than interpersonal channels for earlier adopters than late adopters. Later adopters rely on interpersonal channels because there has been local experience with the innovation in their community (Rogers, 2003). Early adopters tend to be more adventurous and mass media channels are typically enough to move them forward with adoption of an innovation. On the other hand, later adopters require a stronger influence from interpersonal networks in order to adopt an innovation (Rogers, 2003).

Diffusion of technology and innovations specifically in agriculture began in the early 1960s. Since then, communication diffusion research has expanded due to the internet and other communication technologies, like social media (Rogers, 2003). A study conducted by researchers at the University of Florida looked at the adoption of design principles to communicate messages by early career Extension faculty utilizing the innovation-decision process (Beattie et al., 2022). Rogers (2003) stated, “the challenge for future research is to expand the area of digging and to search for different objectives than those of the past” (p. 101).
Chapter 3. Methodology

Purpose

The purpose of this study was to examine the usage of social media by West Virginia agricultural producers.

Objectives

1. Describe the willingness to adopt social media by West Virginia agricultural producers [QUANT];

2. Describe the utilization of social media by West Virginia agricultural producers [QUANT/QUAL];

3. Describe the perceived characteristics of social media, according to Rogers (2003), by West Virginia agricultural producers [QUANT/QUAL]; and

4. Describe the barrier(s) of implementing social media by West Virginia agricultural producers [QUAL].

Research Design

A mixed methodology design was employed for this study utilizing an explanatory sequential design and the participation selection model (Creswell & Plano Clark, 2011). The quantitative phase was conducted first to collect and analyze data. Based on the quantitative results, participants were identified and purposefully selected for the next phase based on specific criteria. The qualitative phase consists of data
collection and analysis from in-depth interviews that are based on the quantitative findings. Results from the qualitative phase are connected to results from the quantitative phase to interpret findings of the study (Creswell & Plano Clark, 2011).

**Population**

The target population of this study consisted of agricultural producers in the state of West Virginia. The USDA Rural Business-Cooperative Services defines agricultural producers as those who “engage in the production or harvesting of an agricultural product. Producers may or may not own the land or other production resources” (n.d.). A non-probability, convenience sampling method was used due to the access and influx of agricultural producers in one location. Non-probability sampling methods are being used more for experimentation and for surveys that need a quick turnaround (Dillman et al., 2014). The sample population was taken from attendants at the Annual West Virginia Farm Bureau (WVFB) Meeting that was held for three days in November 2022. Choosing this specific event allowed me to have access to agricultural producers in West Virginia and contributed to the convenience of the research timeline. The West Virginia Farm Bureau is an organization consisting of individuals who want to have a voice within their state relating to agriculture, education, the environment, etc. (WVFB, 2019). Within the questionnaire, those who answered “no” to the question “Do you identify as an agricultural producer?,” were removed from the sample.

**Survey Instrument**

The survey instrument utilized a descriptive survey and was adapted and slightly modified from Bowen (2014) and Moore and Benbasat (1991) for the purpose of this
research. The questionnaire allowed researchers to collect data from agricultural producers using printed hard copies which were distributed at the West Virginia Farm Bureau conference. Hard copies of the instrument were vital to use to attempt to reach all adopters and non-adopters of social media.

There were four sections of the questionnaire. The first section contained multiple choice and matrix questions to determine the utilization of social media by agricultural producers. The second section included multiple choice Likert-type scale questions to determine the willingness to adopt social media into their agricultural operations. The third section included 5-point Likert-type scale questions with options ranging from strongly disagree to strongly agree to determine the perceived attributes of social media by West Virginia agricultural producers. The final section consisted of questions to collect demographics of respondents.

**Validity and Reliability**

Validity of a survey instrument is utilized to determine that the results of the survey will be accurate. To ensure face and content validity, a panel of experts reviewed the survey prior to administration. This panel consisted of faculty members from West Virginia University, Dr. Haley Rosson and Dr. Aaron Giorgi, and from Oklahoma State University, Dr. Quisto Settle. Dr. Rosson served as the committee chair and was the qualitative methodology expert. Dr. Giorgi’s expertise lies within quantitative methodology, and Dr. Settle’s expertise is in the area of agricultural communications.

Cognitive interviews were conducted to also ensure validity of the instrument with members of the target population, who were not included in the sample. Cognitive
Interviews were conducted to help ensure respondents understood and answered accurately the questions in the instrument (Dillman, 2014). The researcher conducted cognitive interviews with five agriculture producers who reside in West Virginia approximately two weeks prior to the West Virginia Farm Bureau Conference. The five producers that were selected represented a variety of commodities, ages, and different regions of the state. The interviews lasted approximately 30 minutes. The researcher instructed the participants to navigate the survey while verbally discussing their understanding of items and survey functionality. This ensures that if there are any discrepancies or clarifications needed for the questions by members of the population, the researcher can make the necessary adjustments to the questionnaire. After the cognitive interviews, the researcher made changes to wording and design of questions to better suit the target population.

Reliability of the instrument was previously determined by Bowen (2014) and Moore and Benbasat (1991) utilizing Cronbach’s alpha coefficient. According to Tavakol and Dennick (2011), Cronbach’s alpha measure should be a range of .70 - .95. Bowen (2014) calculated Cronbach’s alpha level of .742 for usage of social media and .877 for perceptions of social media. Moore and Benbasat (1991) calculated Cronbach’s alpha for each construct and are as follows: relative advantage (α = .92); compatibility (α = .83); ease of use (complexity) (α = .80); trialability (α = .71); and visibility (α = .73). Moore and Benbasat (1991) determined “observability” as a characteristic was quite complex in the instrument development process and therefore used the terms “result demonstrability”
and “visibility” in place because the results are visible and amenable to a potential adopter (Moore & Benbasat, 1991).

**Data Analysis**

Data was analyzed using Microsoft Excel to run descriptive statistical analyses for the appropriate scales of measurements. This included the mean, frequencies, and standard deviation. Results of the analyses were represented as the mean and standard deviation and as frequencies and percentages.

**Selection of Participants**

The participation selection model of the explanatory sequential design was utilized in this study. After quantitative data was collected and analyzed, participants were selected based on responses to quantitative data. Participants indicated if they used social media for professional purposes. Out of all respondents, 13 selected “yes” and agreed to participate in an interview. The 13 affirmative respondents were then solicited for participation in the qualitative phase of this study. Emails and/or phone calls, based on contact preference indicated in the survey, were made to contact participants to ask to participate in an interview based on their quantitative responses. Four participants agreed to participate in an interview. Interviews were scheduled via Zoom by the researcher and participants.

**Data Collection**

After participants were selected, semi-structured, virtual interviews were conducted with the participants and limited to approximately one hour. Semi-structured interviews allow for the interviews to be conversation-like, with the opportunity to
include probing questions. Merriam and Tisdell (2018) stated, “most of the interview is guided by a list of questions or issues to be explored, and neither the exact wording nor the order of the question is determined ahead of time” (p. 110-111). With the permission of the respondents, the interviews were recorded on both an audio recorder and the recording feature on Zoom. Interviews were conducted via Zoom to allow for flexibility in time and location for both the interviewees and me.

**Data Analysis**

Each interview was transcribed by Zoom and was proofread and placed into a separate Microsoft Word document. Each respondent was assigned a pseudonym to protect anonymity of participants. Throughout the transcription process themes began to naturally emerge. The researcher then determined a list of common words and phrases that were reoccurring throughout the interviews.

Merriam and Tisdell (2018) identified open coding as the process of making notations next to your data while being open to anything possible that may emerge. Assigning these codes to pieces of data begins the process of categorizing (Merriam & Tisdell, 2018). The general themes are then developed for the study. After the process of open coding follows axial coding. Axial coding comes from interpretation and reflection on meaning (Richards, 2015). The sub-themes from axial coding will help interpret and explain the major themes. Glaser and Strauss (1967) remind researchers that categories should have a life on their own, separate from the data from which they emerged.
Research Rigor

Trustworthiness of qualitative research refers to whether the findings and interpretations are an outcome of systematic process and can be trusted (Lincoln & Guba, 2013). Lincoln and Guba (1985) identified substitutes for validity and reliability measures for qualitative research - credibility, transferability, dependability, and confirmability.

Credibility

Credibility establishes confidence in the findings and interpretations of a research study, which corresponds to the internal validity (Lincoln & Guba, 2013). Assuring credibility of a study includes the following techniques: prolonged engagement, persistent observation, triangulation of sources, peer debriefing, negative case analysis, referential adequacy, and member checks (Lincoln & Guba, 2013).

Credibility for this study was established through peer debriefing and member checks. Peer debriefing was conducted by a faculty member at West Virginia University to ensure findings, interpretations, and analyses were accurate. Member checks were conducted by sending the participants transcripts of the interview to ensure accuracy.

Transferability

External validity, or generalizability, is the method to ensure the findings are applicable to different contexts, populations, and subjects (Lincoln & Guba, 2013). In qualitative research, generalizability is not the aim, however, it is important to be sure the findings are applicable by the readers of the study (Lincoln & Guba, 2013). Transferability is conducted by ensuring thick description (Geertz, 1973). Therefore, it is
up to the researcher to provide enough description so the readers may determine if the findings are applicable to their own contexts (Lincoln & Guba, 2013). Transferability was established by utilizing thick descriptive data.

**Dependability**

Dependability addresses how the findings and interpretations are an outcome of a consistent and dependable process (Lincoln & Guba, 2013). Achieving dependability can be established through an audit where a designated individual reviews the inquiry process, in addition to the data, findings, interpretations, and recommendations to check for consistency (Lincoln & Guba, 1985). Though dependability is closely related to credibility, dependability provides more focus on the accuracy and replicability of the study. Overlapping methods is one way to ensure dependability of a qualitative research study. This includes utilizing multiple data gathering procedures such as questionnaires, focus groups, observations, etc. (Denzin, 1994). Shenton (2004) stated that the researcher should provide a detailed description of the methodology, so that future researchers can replicate the study.

Dependability was ensured in this study through the use of overlapping methods in the form of a questionnaire respondents participated in prior to the interviews. In addition, the methodology chapter clearly provides the steps and procedures the researcher took to complete this study, so that other researchers may attempt to replicate the study in the future.

**Confirmability**
Confirmability refers to how the findings and interpretations of the study are a result of a reliable process of research and data collection (Lincoln & Guba, 2013). The techniques for ensuring confirmability include an audit trail, triangulation, and reflexive journal (Lincoln & Guba, 2013). Lincoln and Guba (1985) identified the following audit trail categories:

1. Raw data - written field notes, documents, and so on;
2. Data reduction and analysis products - summaries such as condensed notes, quantitative notes, and theoretical notes;
3. Data reconstruction and synthesis products - structure of categories (themes, definitions, and relationships), and findings and conclusions;
4. Process notes - methodological notes (procedures, designs, strategies, and trustworthiness notes);
5. Materials relating to intentions and dispositions - inquiry proposals, reflexive notes, and expectations; and
6. Instrument development information - pilot forms, preliminary schedules, observations format.

Confirmability was exhibited in this study through an audit trail. Raw data were collected in the forms of questionnaires, interview video footage, and interview transcripts. After the interviews were transcribed, the researcher analyzed the data into categories of the themes and sub-themes.
Researcher Subjectivity Statement

My subjectivity as a researcher is important to disclose within this study due to my familiarity with the sample population and the topic at hand. Growing up around a West Virginia agricultural operation, and around West Virginia agriculture, has been a big part of why I decided to pursue a degree in Agricultural and Extension Education and participate in this research. I was always intrigued by agriculture education in particular because of the importance of the industry and the lack of awareness that a majority of consumers have about agriculture. In fact, the average U.S. citizen is three generations removed from agriculture (American Farm Bureau Federation, n.d).

Because of my family’s long farming history, I see social media from a farmer’s lens. I also see the benefits of using social media because of my generation being raised on technology. My lens, however, is complicated by my suburban upbringing and may interfere with the upbringings of my sample population. In addition, my geographical location has been known to be more accessible to the internet, as compared to other parts of West Virginia. If I am studying social media in rural parts of West Virginia, I have to consider the options regarding broadband access. Being a part of a younger generation, technology usage comes easier to individuals closer in age to me. Therefore, someone who is younger coming to research new technological practices may cause some hesitation from specific audiences.

Using West Virginia as the population allows me, the researcher, to have access to a variety of individuals due to my personal connections throughout the state. Though it is small in size in comparison to other states, working with the university and having ties
to the West Virginia Farm Bureau, made the sample more accessible. As a researcher, being aware of the biases you may encounter is important and establishing validity checks can be sure to eliminate those biases.
Chapter 4. Findings

Purpose

The purpose of this study was to examine the usage of social media by West Virginia agricultural producers.

Objectives

1. Describe the willingness to adopt social media by West Virginia agricultural producers [QUANT];
2. Describe the utilization of social media by West Virginia agricultural producers [QUANT/QUAL];
3. Describe the perceived characteristics of social media, according to Rogers (2003), by West Virginia agricultural producers [QUANT/QUAL]; and
4. Describe the barrier(s) of implementing social media by West Virginia agricultural producers [QUAL].

Quantitative Results

The population consisted of West Virginia agricultural producers who were in attendance at the 2022 West Virginia Farm Bureau meeting. Approximately 200 people were registered for this meeting, but attendance varied each day. A survey was administered in person at the event (N = 44). The population was asked to identify their demographic information (see Table 4.1). Demographics that were not reported are not
shown. 61.36% identified as male \( (f = 27) \) and 36.36% identified as female \( (f = 16) \). Respondents were asked to report their age group. 4.54% were in the 18-24 age group \( (f = 2) \), 25.00% indicated they were in the 25-34 age group \( (f = 11) \), 13.64% were in the 35-44 age group \( (f = 6) \), 11.36% were in the 55-64 age group \( (f = 5) \), 34.09% were in the 65-74 age group \( (f = 15) \), and 6.82% were in the 75 years or older range \( (f = 3) \).

Respondents were asked to report their race. 95.45% reported they identified as White \( (f = 42) \) and 2.27% reported they identified as Native American or Alaskan Native \( (f = 1) \).

### Table 4.1. Demographics of agriculture producers: gender, age, and race

<table>
<thead>
<tr>
<th>Gender</th>
<th>( f )</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>27</td>
<td>61.36</td>
</tr>
<tr>
<td>Female</td>
<td>16</td>
<td>36.36</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age</th>
<th>( f )</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-24 years</td>
<td>2</td>
<td>4.54</td>
</tr>
<tr>
<td>25-34 years</td>
<td>11</td>
<td>25.00</td>
</tr>
<tr>
<td>35-44 years</td>
<td>6</td>
<td>13.64</td>
</tr>
<tr>
<td>45-54 years</td>
<td>1</td>
<td>2.27</td>
</tr>
<tr>
<td>55-64 years</td>
<td>5</td>
<td>11.36</td>
</tr>
<tr>
<td>65-74 years</td>
<td>15</td>
<td>34.09</td>
</tr>
<tr>
<td>75 years or older</td>
<td>3</td>
<td>6.82</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Race</th>
<th>( f )</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>42</td>
<td>95.45</td>
</tr>
<tr>
<td>Native American or Alaskan Native</td>
<td>1</td>
<td>2.27</td>
</tr>
</tbody>
</table>

*Note.* Demographics that were not reported are not shown.

Producers were asked to classify their agricultural operations (see Table 4.2). Respondents were able to select more than one option. Of those responding, 34.09% selected Wholesale \( (f = 15) \), 54.55% selected Direct Market \( (f = 24) \), 47.77% selected On
Farm Sales \( (f = 21) \), 20.45% selected Retail \( (f = 9) \), and one participant responded as a Broker.

**Table 4.2. Demographics of agriculture producers: classification of operation**

<table>
<thead>
<tr>
<th>Type of operation</th>
<th>( f )</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wholesale</td>
<td>15</td>
<td>34.09</td>
</tr>
<tr>
<td>Direct Market</td>
<td>24</td>
<td>54.55</td>
</tr>
<tr>
<td>On Farm Sales</td>
<td>21</td>
<td>47.77</td>
</tr>
<tr>
<td>Retail</td>
<td>9</td>
<td>20.45</td>
</tr>
<tr>
<td>Broker</td>
<td>1</td>
<td>2.27</td>
</tr>
</tbody>
</table>

*Note. Respondents were able to select more than one option.*

The majority (75.00%) of respondents indicated they use social media for personal use \( (f = 33) \), whereas 56.82% of respondents indicated they use social media for professional use \( (f = 25) \).

Weekly personal and professional use of social media was reported by participants (see Table 4.3). Of those responding for personal use, 34.09% used social media 0-2 hours per week \( (f = 15) \), 15.91% used social media 3-4 hours per week \( (f = 7) \), 13.64% used social media 5-6 hours per week \( (f = 6) \), 11.36% used social media 7-8 hours per week \( (f = 5) \), 11.36% used social media 9-10 hours per week \( (f = 5) \), and 4.54% used social media 11+ hours per week \( (f = 2) \). Those who indicated they used social media for professional use also reported weekly social media usage. Of those responding, 45.45% used social media 0-2 hours per week \( (f = 20) \), 11.36% used social media 3-4 hours per week \( (f = 5) \), 4.54% used social media 5-6 hours per week \( (f = 2) \), 6.82% used social media 7-8 hours per week \( (f = 3) \), 4.54% used social media 9-10 hours per week \( (f = 2) \) and 4.54% used social media 11+ hours per week \( (f = 2) \).
Table 4.3. **Hours per week spent on social media sites**

|                  |   |  
|------------------|---|---
| **Personal Use** |   |  
| 0-2 hours        | 15| 34.09 |
| 3-4 hours        | 7 | 15.91 |
| 5-6 hours        | 6 | 13.64 |
| 7-8 hours        | 5 | 11.36 |
| 9-10 hours       | 5 | 11.36 |
| 11+ hours        | 2 |  4.54 |
| **Professional Use** | |  
| 0-2 hours        | 20| 45.45 |
| 3-4 hours        | 5 | 11.36 |
| 5-6 hours        | 2 |  4.54 |
| 7-8 hours        | 3 |  6.82 |
| 9-10 hours       | 2 |  4.54 |
| 11+ hours        | 2 |  4.54 |

Producers reported the devices they use to connect to social media (see Table 4.4). Respondents indicated 31.82% use a Desktop PC ($f = 14$), 34.09% use a laptop computer ($f = 15$), 22.73% use an iPad or tablet computer ($f = 10$), and a majority, 75.00%, use a smartphone with internet access ($f = 33$).

Table 4.4. **Devices used by producers to connect to social media**

|                  |   |  
|------------------|---|---
| Smartphone (with internet) | 33 | 75.00 |
| Laptop Computer   | 15| 34.09 |
| Desktop PC        | 14| 31.82 |
| iPad or Tablet computer | 10 | 22.73 |

*Note.* Respondents were able to select more than one option.

Respondents were asked which social media platforms they believed to be useful to utilize as an agricultural producer (see Table 4.5). Of those responding, 84.09% selected Facebook ($f = 37$), 34.09% selected Instagram ($f = 15$), 15.91% selected Twitter
(f = 7), 56.82% selected YouTube (f = 25), 15.91% selected Snapchat (f = 7), 22.73% selected TikTok (f = 10) and 25.00% selected an online blog (f = 11).

Table 4.5. Social media platforms producers believe are useful as an agriculture producer

<table>
<thead>
<tr>
<th>Platform</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facebook</td>
<td>37</td>
<td>84.09</td>
</tr>
<tr>
<td>YouTube</td>
<td>25</td>
<td>56.82</td>
</tr>
<tr>
<td>Instagram</td>
<td>15</td>
<td>34.09</td>
</tr>
<tr>
<td>Online Blog</td>
<td>11</td>
<td>25.00</td>
</tr>
<tr>
<td>TikTok</td>
<td>10</td>
<td>22.73</td>
</tr>
<tr>
<td>Twitter</td>
<td>7</td>
<td>15.91</td>
</tr>
<tr>
<td>Snapchat</td>
<td>7</td>
<td>15.91</td>
</tr>
</tbody>
</table>

Note. Respondents were able to select more than one option.

Over half of respondents (52%) indicated either the agriculture producer they work for, or themselves, use social media to interact with various audiences (f = 23). Respondents were then prompted to select how they, or their employer, utilize social media to interact with their audience (see Table 4.6). 43.18% utilize social media for direct communication with audiences (i.e., sharing Facebook messages, Instagram direct messages, Twitter direct messages) (f = 19), 36.36% use social media for in-direct communication with audiences, i.e., posting to an agriculture interest group, sharing information via Twitter post updates, Instagram post updates, or Facebook post updates (f = 16); and 29.55% use social media to share/mass communication with audiences, i.e., creating an agriculture focused blog, Facebook page, YouTube account, to share general information with a large group (f = 13).
Table 4.6. How social media sites are utilized in agriculture operations

<table>
<thead>
<tr>
<th>Description</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Communication with audiences (i.e., sharing Facebook messages, Instagram direct messages, Twitter direct messages)</td>
<td>19</td>
<td>43.18</td>
</tr>
<tr>
<td>In-direct communication with audiences (i.e., posting to an agriculture interest group, sharing information via Twitter post updates, Instagram post updates, or Facebook post updates)</td>
<td>16</td>
<td>36.36</td>
</tr>
<tr>
<td>Sharing/mass communication (i.e., creating an agriculture focused blog, Facebook page, YouTube account, to share general information with a large group)</td>
<td>13</td>
<td>29.55</td>
</tr>
</tbody>
</table>

Note. Respondents were able to select more than one option.

Respondents were asked how important they believe it is for an agricultural producer to actively engage in social media. Overall, producers believed it was moderately important ($M = 3.45; SD = 1.02$) for producers to actively engage in social media on a Likert-scale from $1 = not at all important$, $2 = slightly important$, $3 = moderately important$, $4 = very important$, and $5 = extremely important$.

Utilizing a 5-point Likert-scale ranging from $1 = strongly disagree$, $2 = disagree$, $3 = neither agree nor disagree$, $4 = agree$, and $5 = strongly agree$, willingness to adopt social media by agricultural producers was measured (see Table 4.7). When given the statement, which was reverse coded, “I have no interest in using social media for my operation,” the respondents’ average was neither agree nor disagree ($M = 3.55; SD = 1.41$). For the statement “I would be willing to use social media for my operation, but I do not know how,” the average was somewhat disagree ($M = 2.67; SD = 1.30$). The
statement “I would be willing to participate in an online training session to learn how to use social media for my operation,” had an average of neither agree nor disagree ($M = 3.33; SD = 1.15$). The statement “I would be willing to attend a regional training meeting to learn how to use social media for my operation,” had an average of neither agree nor disagree ($M = 3.19; SD = 1.24$). Respondents who were given the statement “I would be willing to learn about social media and then share my knowledge with fellow agricultural producers,” had an average of neither agree nor disagree ($M = 3.30; SD = 1.30$). The overall willingness to adopt social media average was neither agree nor disagree ($M = 3.23; SD = 0.92$).

Table 4.7. Willingness to adopt social media by agriculture producers

<table>
<thead>
<tr>
<th></th>
<th>$M$</th>
<th>$SD$</th>
</tr>
</thead>
<tbody>
<tr>
<td>*I have no interest in using social media for my operation.</td>
<td>3.65</td>
<td>1.31</td>
</tr>
<tr>
<td>I would be willing to participate in an online training session to learn how to use social media for my operation.</td>
<td>3.33</td>
<td>1.15</td>
</tr>
<tr>
<td>I would be willing to learn about social media and then share my knowledge with fellow agricultural producers</td>
<td>3.30</td>
<td>1.30</td>
</tr>
<tr>
<td>Overall willingness to adopt score</td>
<td>3.23</td>
<td>0.92</td>
</tr>
<tr>
<td>I would be willing to attend a regional training meeting to learn how to use social media for my operation.</td>
<td>3.19</td>
<td>1.24</td>
</tr>
<tr>
<td>I would be willing to use social media for my operation, but I do not know how.</td>
<td>2.67</td>
<td>1.30</td>
</tr>
</tbody>
</table>

Note. Likert Scale: 1 = Strongly Disagree, 2 = Somewhat Disagree, 3 = Neither agree nor disagree, 4 = Somewhat Agree, 5 = Strongly Agree

* Indicates reverse coded items
Utilization of social media was also determined by a 5-point Likert-scale with responses ranging from $1 = \text{strongly disagree}$, $2 = \text{disagree}$, $3 = \text{neither agree nor disagree}$, $4 = \text{agree}$, and $5 = \text{strongly agree}$, some items were reverse coded to measure overall utilization average (see Table 4.8). When presented with the statement “I have the resources necessary to use social media,” the average was $\text{neither agree nor disagree}$ ($M = 3.55; SD = 1.41$). The statement “I have the knowledge necessary to use social media” was also an average of $\text{neither agree nor disagree}$ ($M = 3.55; SD = 1.23$). When given the statement “I feel apprehensive about using social media,” the item was reverse coded with the average being $\text{somewhat disagree}$ ($M = 2.95; SD = 1.35$). The statement “I hesitate to use social media because of online privacy concerns,” was also reverse coded with an average of $\text{somewhat disagree}$ ($M = 2.88; SD = 1.32$). The overall average of the construct utilization of social media was $\text{neither agree nor disagree}$ ($M = 3.23; SD = 0.97$).

**Table 4.8. Utilization of social media by agriculture producers**

<table>
<thead>
<tr>
<th>Statement</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have the resources necessary to use social media.</td>
<td>3.55</td>
<td>1.41</td>
</tr>
<tr>
<td>I have the knowledge necessary to use social media.</td>
<td>3.55</td>
<td>1.23</td>
</tr>
<tr>
<td>*I feel apprehensive about using social media.</td>
<td>2.95</td>
<td>1.35</td>
</tr>
<tr>
<td>*I hesitate to use social media because of online privacy concerns.</td>
<td>2.88</td>
<td>1.32</td>
</tr>
<tr>
<td>Overall utilization average</td>
<td>3.23</td>
<td>0.97</td>
</tr>
</tbody>
</table>

*Indicates reverse coded items.
The grand means for the perceived attributes, as denoted in Rogers (2003) and Moore and Benbasat (1991) were measured utilizing a 5-point Likert-scale ranging from 1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, and 5 = strongly agree, (see Table 4.9). The overall average for relative advantage was somewhat disagree \( (M = 2.85; SD = 1.27) \). The overall average of compatibility of social media had an average of somewhat disagree \( (M = 2.59; SD = 1.34) \). The overall average for complexity of social media was somewhat disagree \( (M = 2.91; SD = 0.95) \). The overall average of result demonstrability of social media as perceived by agricultural producers was neither agree nor disagree \( (M = 3.22; SD = 0.73) \). The overall average of trialability of social media perceived by producers had an average of somewhat disagree \( (M = 2.63; SD = 0.98) \). Refer to Appendix C for items used to measure each perceived characteristic.

**Table 4.9. Perceived characteristics construct means**

<table>
<thead>
<tr>
<th>Construct</th>
<th>( M )</th>
<th>( SD )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Result Demonstrability</td>
<td>3.22</td>
<td>0.73</td>
</tr>
<tr>
<td>Complexity</td>
<td>2.91</td>
<td>0.95</td>
</tr>
<tr>
<td>Relative Advantage</td>
<td>2.85</td>
<td>1.27</td>
</tr>
<tr>
<td>Trialability</td>
<td>2.63</td>
<td>0.98</td>
</tr>
<tr>
<td>Compatibility</td>
<td>2.59</td>
<td>1.34</td>
</tr>
</tbody>
</table>

*Note. Likert Scale: 1 = Strongly Disagree, 2 = Somewhat Disagree, 3 = Neither agree nor disagree, 4 = Somewhat Agree, 5 = Strongly Agree*

**Qualitative Results**

**Participants**

Outlined in Chapter III, the target population for the study was West Virginia agricultural producers, specifically examining their utilization, or non-utilization, of social media. Participants of the qualitative aspect of this study were selected utilizing the
participant selection model outlined in the explanatory sequential mixed methods design as explained in Chapter III (Creswell & Plano Clark, 2011). Those individuals who positively identified they used social media professionally via the survey, and consented to participate in an interview, were contacted via email to participate. Four individuals responded and consented to participate in the in-depth interview. To provide an overview of the participants, Table 4.10 provides the participants’ pseudonyms, their occupations, and the type of agricultural operation they identified from the survey.

Table 4.10. Interview participants’ demographic information (N = 4)

<table>
<thead>
<tr>
<th>Pseudonym</th>
<th>Occupation</th>
<th>Type of Producer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rachel</td>
<td>Program Coordinator for agriculture advocacy organization</td>
<td>On Farm Sales</td>
</tr>
<tr>
<td>Savannah</td>
<td>Coordinator for state agricultural commodity group</td>
<td>Direct Market</td>
</tr>
<tr>
<td>William</td>
<td>High School Agriculture Teacher/Dairy Producer</td>
<td>Wholesale; On Farm Sales</td>
</tr>
<tr>
<td>Cassandra</td>
<td>Agriculture Producer- Beef, Lambs, Agritourism</td>
<td>Wholesale; Direct Market; Retail; On Farm Sales</td>
</tr>
</tbody>
</table>

Research Objective 2

Research objectives two through four were examined throughout the qualitative process. The second research objective sought to describe the utilization of social media by West Virginia agriculture producers. The researcher developed questions based on the responses from the quantitative survey results to meet this objective. In order to answer
the research objective, the researcher thoroughly examined and analyzed the transcripts. The common themes and sub-categories that emerged are reported in these findings.

Through the analysis process of open coding, two major themes emerged related to 1) *telling the agriculture story* and 2) *communicating with various audiences*. Sub-categories also emerged within the main codes through the use of axial coding. Table 4.11 provides a visual representation of open and axial coding relating to research objective 2.

**Table 4.11. Coding for research objective 2 – utilization of social media**

<table>
<thead>
<tr>
<th>OPEN</th>
<th>AXIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telling the agriculture story</td>
<td>• Advocating</td>
</tr>
<tr>
<td></td>
<td>• Avoid sharing the negatives</td>
</tr>
<tr>
<td></td>
<td>• Educating others</td>
</tr>
<tr>
<td>Communicating with various audiences</td>
<td>• Consumer communication</td>
</tr>
<tr>
<td></td>
<td>• Parents &amp; Guardians</td>
</tr>
<tr>
<td></td>
<td>• Producers</td>
</tr>
<tr>
<td></td>
<td>• Interest Pages</td>
</tr>
</tbody>
</table>

*Telling the agriculture story*

When asked why participants use social media, the theme of telling and sharing the story of agriculture became one of the most prevalent themes that continued to occur throughout the interviews. Each participant described how they believed it was important to share the agriculture story on both their professional and personal social media pages. Four sub-categories emerged relating to how they share their stories, including: 1) advocating; 2) avoiding sharing the negatives; and 3) educating others.
During the interview with Rachel, she indicated the importance of agriculturists being active on social media relating to being able to share your own narrative.

Rachel: If you're not using your voice to advocate for what you do and what you have. Somebody else is going to do it for you, and you don't get to spell out that narrative. So, it's almost like a caution control thing like you want to be able to make sure, especially if you have a business. I mean that depends on people, you know, believing in it, like you need to be able to do that kind of press control, and make sure that there isn't a bad narrative out about you and your industry.

Rachel also shared an experience during a webinar that relates to sharing negative posts on social media relating to agriculture:

Rachel: … [WEBINAR SPEAKER] said something in that Webinar thing that has like stuck with me, and I feel like I share this with other people. But it's when you see bad news about agriculture, or bad news about anything, I mean, this can be related to anything. Don't share it. Like it the more that you share it and show people it’s not… that’s giving them the engagement they need.

Savannah also expressed the importance of sharing your own story as an agriculturist. She stated:

Savannah: So, I guess one of the things that comes to mind is, if you're not telling your story who is? So, I think it gives us as farmers an outlet to talk about, you know, processing animals, being open and educational to people that might not understand what different words mean on their packaging.
Savannah also stated she felt it was important for agriculturists to use social media and create educational posts.

**Savannah:** I think [using social media] is just important to just do it. Like, look at research, what other people are doing that maybe you could do. Like I said, sharing recipes, that’s something super easy. If you sell, let’s say, ground beef. Why don't you share some recipes for ground beef? You don't have to be super just everything out in the public, but you can definitely talk about your farm, what your animal names are. Not everything has to be super serious. So, I think social media is definitely a tool, but I think it's something you can have fun with, too.

William shared a similar response regarding telling the agriculture story but brought in an interesting thought. He shared, “Because we have so many niche and small farming opportunities across the state, it's a great way to advertise what we do and tell a story.”

Cassandra also briefly mentioned the importance of utilizing social media as an agricultural producer. She stated, “Just because it can tell your story, and like I mentioned earlier, you can gain a greater audience through that.”

**Communicating with various audiences**

Utilizing social media allowed all four of the producers interviewed to communicate with various audiences. These sub-categories included those varying audience members: 1) consumer communication; 2) parents and guardians; 3) producers (hobby and niche farming); and 4) interest pages.
Cassandra utilizes social media to communicate with her customers. In the area of West Virginia where she is located, cell phone service is scarce, so they rely on using social media. She stated:

**Cassandra:** I feel like social media has been a huge help for us, especially where we don't have cell phone service, and just by posting on Facebook like once or twice a week like, say, we still been able to stay in contact with our customers, and let them know if we have like a new shipment of meat, or we'll be at the farmers market this week… [Social media] just allows you to interact with a greater audience. We have customers throughout the State now versus just here in [county] alone.

Rachel, as a program coordinator for an advocacy group, shares that their intended audience are producers in the area that they serve; however, they see trends in consumers and educators interacting with their informational graphics. She shared, “we want to aim towards producers, and that's like our main focus. But we tend to see that a lot of educators and consumers are the ones that are picking up our infographics and things like that.”

William, as a high school agriculture teacher, utilizes social media in the classroom and shared his positive feelings towards using it for FFA chapter updates.

**William:** We actually use it quite a bit for communicating with students. And maybe more importantly communicating with parents and grandparents, because we put a lot of things out that we do through the FFA Facebook… I just think it's a good tool for us to use as ag teachers to talk about what we do, and it's
instant and convenient, and you know we can, we can do it immediately when the event happens.

William also shared he doesn’t have a designated page for his family’s dairy operation, but he does utilize social media for the use of interest pages. He shared:

**William:** I’m on a couple of dairy farmer sites that I see daily, with whether it's used equipment or just ideas that they have to be more productive, but we don't use it to promote our farm or selling our commodities. We really don't have much control over you know, where [the milk] goes, what happens to it. So, what we do, like here, share things that our kids do. Yeah, and just things that are going on as far as especially, my wife shares a lot of hay making pictures… So, one [interest page] that I belong to is “Dairy Farmers Milking Under 250 Cows.” And there's always, you know, there’s neat things that people have done that are cost effective ways of handling the challenges that maybe I didn't think of. Of course, the teachers, the teacher pages are great, too, because there's so much sharing…”

**Summary for Research Objective 2**

In conclusion, the four producers who participated in these interviews are utilizing social media in similar ways, the most prevalent theme being the idea to share their agriculture story. Participants indicated they all used social media and believed it was important for other agriculturists to write out their own narrative for the agriculture industry. Producers also utilized social media to communicate with various audiences such as consumers, parents and guardians, other producers, and on interest pages.
Research Objective 3

The third research objective sought to describe the perceived characteristics, as described by Rogers (2003), of social media by West Virginia agricultural producers. The themes that emerged were consistent with Rogers’ (2003) perceived characteristics: 1) Relative advantage; 2) complexity; 3) compatibility; 4) trialability; and 5) observability.

Several sub-categories also emerged that further describe the attributes. These themes and sub-categories are depicted in Table 4.12.

Table 4.12. Coding for research objective 3 – perceived characteristics of social media

<table>
<thead>
<tr>
<th>OPEN</th>
<th>AXIAL</th>
</tr>
</thead>
</table>
| Relative advantage | • Cost effective  
| | • Instant communication  
| | • Faster than print  
| | • Keeping up to date  
| Complexity | • Easier/natural for younger generation  
| | • Complexity dependent on application and knowledge of users  
| Compatibility | • Compatible with businesses  
| | • Not compatible with lack of internet access  
| Observability | • Social media use by others  
| | • Personal use informs producer use  
| Trialability | • Twitter/TikTok/versus other platforms |
Relative advantage

Rogers (2003) defined relative advantage as “the degree to which an innovation is perceived as being better than the idea it supersedes” (p. 15). Social media was perceived to be relatively advantageous over print media. All participants noted the relative advantage of social media. Several sub-categories emerged throughout this theme. Those sub-categories include: 1) cost effective, 2) instant communication, and 3) keeping up to date.

Rachel indicated that social media is practically free to use. She stated, “It's significantly cheaper. To post things on social media. I mean, like to go to Staples is ridiculous, I mean. And even if you're going to like a regular company, or something like that. It's expensive to do print media, where social media is free.” Rachel also mentioned the more traffic you will receive by using social media posts. She said, “it's just a lot easier to share. Like if you send a flyer in the mail to somebody that probably that one family member is going to be the one that looks at it, where, if it's on Facebook, your engagement is going to be a lot higher.” In addition, Rachel indicated social media is how she stays up to date with news stories, “I mean, that's where I get all my sports news, all my updates.”

Savannah’s place of employment switched to using digital newsletters and saw the clear advantages of using social media versus print media.

Savannah: It's cheaper. It's faster. I don't have to wait for printers. I don't have to pay for printing. I’m just starting to get into doing like digital newsletters. They will, they will still be printed. But like, if people want to opt into having them
digitally, they can, because sending over 400 newspaper copies is a lot more expensive than sending out a free email to everybody in the membership.”

William specifically mentioned the advantage of using social media is the rate of accessibility.

**William:** The accessibility and it's so current. I mean, it's almost real time. Folks – just that's something you can access, you know, if you have 10 minutes in your car waiting for somebody or you're anywhere with a little downtime. You can pull the phone and pull up that media versus you know, of course, your printed materials. So, they just don't get recognized much anymore, because they're not accessible, and the fact that you can respond makes it that much beneficial as well.

Cassandra repeated various times the advantages of her operation using social media. Without social media, they wouldn’t have gained a broader audience. She said, “It just allows you to interact with a greater audience. We have customers throughout the state now versus just here in [COUNTY] alone.” She also told an anecdote later in the interview about the advantages of using social media as an agriculture producer.

**Cassandra:** For us I mean, we've just been able to gain a broader audience through social media. One good story is we were – whenever we first started selling meat, we were featured in a local newspaper, and some guy from Charleston Googled local meat producers, and he found us. So now it's a regular customer. He comes like once a month all the way from Charleston, just to
purchase our meat, and it's because of social media. I mean no other way would he have ever learned about us.

**Complexity**

Complexity refers to how difficult an innovation is to use (Rogers, 2003). Participants noted the various levels of complexity for social media. Two sub-categories emerged during interviews, which included “easier/natural for younger generations” and complexity level depended on application and knowledge of users.

William is the least familiar with social media applications out of all the participants. He indicated that only one application was easy for him to use, and also referred to Amazon as a social media site.

**William:** Now, Facebook is easy. That's one I’m most familiar with. Of course, you and then, we, on the farm we use you know all the shopping websites, for you know, just like ordering parts. Of course, Amazon's popular. It's nice to be able to have instant access to the equipment part numbers, and you know I can order a part from the hay field.

William mentioned the difficulty of other platforms, simply because he had a lack of knowledge in using them.

**William:** I'm not familiar at all with Snapchat or Instagram. Twitter, I have a little experience with that. But yeah, I don't. I don't quite understand Snapchat because all I see is kids making weird faces. I'm not sure why that has to be that way. But so, I guess those two would be probably the most difficult, just because I don't understand them.
Cassandra echoed William, stating her familiarity and ease of using Facebook for social media.

**Cassandra**: For me I just think that Facebook is easy to follow whether I’m on my phone or my computer. And it says like “post here” or “add a photo” or stuff like that. So, I've just thought that Facebook is easier, and even switching back and forth between our pages, from our personal page to the farm page, to the corn maze page, that's just easy to navigate for me.

When asked about other platforms, Cassandra mentioned Instagram, but was still unfamiliar with this.

**Cassandra**: I know I mentioned Facebook a lot. That's our primary thing. We have one on Instagram. But, like I said, we just did that a week ago. So, we're still learning the ins and outs of that, and we do have a website. But honestly, I don't know much about it. We're paying a girl to do that for us, and she'll kind of post updates for us. But, like, I said really don't do that.

Savannah is younger and grew up around social media. She mentioned the ease of using many platforms and the various aspects of the applications.

**Savannah**: Facebook, I feel like it is pretty straightforward, even though I know, I said, like some people struggle with the basics. But you can add a picture you can type out a couple of sentences and share it with. I think that's pretty basic to use. I think figuring out what people like to see and the professionalism of it, like your page looking nice, comes with time and figuring things out. But I feel like that's pretty easy. And then Instagram same thing, but also like with them being
connected, you could just check a box, and they’ll go on your Instagram and Facebook. You can do it all in one. So, I think that's pretty easy. Like I said, Twitter is easy, but I don't think it's very worth it. And TikTok, it can be cool. You can reach a lot of people, but it's hard to get all your like sounds to sync up and upload all your videos and it would be like a nightmare for someone who’s just starting out.

Savannah later mentioned the difficulty of a newer platform, TikTok. She said, “TikTok, I definitely think it’s harder.”

Rachel had a similar response as Savannah. They both are around similar ages. Rachel indicated the ease of almost all the same platforms, and also mentioned that TikTok could be more difficult.

**Rachel:** I think my favorite thing about Facebook is that when you hit the like little 3, I think it's like 3 lines, or whatever, everything is there. So, like if I want to see like my memories for that day, or I want to see the events, or I want to see whatever it's all in that. I like things that have tabs that are all under one singular tab, so it's easy to find, and easy to see. When you post things like on Facebook, it is very straight to the point. What do you want to say? Where are you? What mood are you in? Who are you with? Like it's just it's easy to do that. And the same goes for Instagram, pretty much. I mean, you know it has a place tag people, put location, put your filter whatever. Twitter is so straight to the point. All you're going to do is put 4 pictures and 200 characters or less. You know it's just it's, it's
there. There's a lot more that you're working with TikTok, so I think, just like simplicity and like direction.

Rachel spoke as to how TikTok was more difficult than the other platforms.

**Rachel:** I just think that TikTok is difficult, because there's so many different aspects like you can put the voice things on there. But like there's things that I want to be able to do, that I just can't like, I want to be able to do like, make my own video or like, add that one. I don't know. I just think there's a lot going on.

**Compatibility**

The idea of compatibility emerged through the interviews. Compatibility is the idea that an innovation is perceived as consistent with existing values and experiences of the potential adopters (Rogers, 2003). Participants perceived social media to be (1) compatible with businesses, but (2) not compatible with the lack of accessibility. Those two sub-categories were echoed by a majority of participants.

William felt that social media is not compatible sometimes, and compatible at other times. He alluded to both statements in his interview.

**William:** In some cases, not compatible at all with our farming operation, because you know, my wife and I both work off the farm. So, our time getting chores done is pretty limited. But we both like to see what's going on, and we're guilty of spending too much time on our social media when we should be doing work… So sometimes milking takes a little longer, calf feeding takes a little longer because it's interrupted with the social media, but on the same note it's nice when you can, you know, post a picture of the new calf that you know somebody is interested in
buying, or you've got something broke on the farm, and he's hey, what do I need to do here, and you get suggestions for maybe a repair or just – the communication’s invaluable. You just have kind of an encyclopedia at your fingertips for help.

William, who is also an agriculture teacher, gave his perspective on using social media for the FFA program at his school.

**William:** When we're doing FFA things, you know. Of course, when we do trips, we try to post pictures of things the kids have done, and it's just yeah, you get all these likes, and you may get 100 comments. And so, you really get the feeling that as a teacher, what you're doing is being appreciated, and it helps to motivate you to want to do more of that and share more of your program

Savannah thought that social media was compatible almost always. She shared examples of how sharing the knowledge and word about your products and agricultural operations makes social media compatible for producers.

**Savannah:** I mean, I think social media is always compatible with what you do...And I think it's just important to make it a priority. Like I said earlier, like if you're not sharing your story and talking about what's going on your farm, like people they wonder. And I think you know educating people, whether it be recipes on how to utilize your product, or if you do that kind of thing, or like raising animals, how to. There's a lot of questions about like animal ethics and whatnot that the public has. So, I think, making it a priority and making it work in your practice, and very important, because, like I said, if they don't understand
what's going on, or if they don't know how to implement what you're selling or like anything like that. Then you need to be educating them and showing them and sharing that.

Cassandra shared that for the most part, social media is compatible, but because of the lack of cell phone service, it is not always compatible.

**Cassandra**: I guess it is for the most part. The hardest part for us is, we don't have cell phone service here, so the only time I’m really able to post stuff is when I’m inside, and we really can't go live like at the barns or anything. Yeah, I can take videos, and then come back to the house and post it. But it takes two hours to post a video or something. So that's a downfall for us, but if we were in cell phone service and had access to that, I do think it would be really beneficial.

Rachel spoke from the perspective of her family’s beef cattle operation. They do not use social media for their operation specifically, but mentioned how it could be compatible for her dad to use.

**Rachel**: So, it's a little bit tricky, because like with what we do with cattle, it's not like we have show cattle, or things like that that we necessarily need to promote. Like I mean like we could, and I think that it would be beneficial. But my dad's just like not there yet. So, it's been little by little. Like getting a logo, putting up a sign, like things like that. So, where I've seen us use it most is social media on our agricultural operation is when my dad – my dad works closely with our stockyards and has a very good relationship with them. So, if there's going to be a board sale, or he knows that he's going to have a load of cattle, he'll take videos or
pictures of the cattle grazing or doing things, something like that for the stockyards to post on their Facebook page.

Rachel specifically mentioned how compatible social media has been for a friend who operates an agricultural product store.

**Rachel:** I see my friend’s number one driver for the store has got to be Facebook. I mean the social media marketing that she has done there within, I mean she had... Let's see she got her job in – She started in January. They open the store in March. They only use social media like I mean, social media has been a huge driver for that business. And would that business be sustainable without social media? Probably not. So, I think it's huge, huge in marketing. Just to be able to push your product and show what you have.

**Trialability**

Trialability is referred to as the degree of how an innovation is experimented with on a limited basis (Rogers, 2003). Trialability emerged as a theme throughout the interview process. One sub-category that emerged was Twitter/TikTok versus other platforms.

Savannah shared her personal experiences with using TikTok, since it emerged as a newer platform in the last few years.

**Savannah:** I can like, put it in perspective of like my personal TikTok. Like, it took me several months to decide that I would try to post one, and it was super cringy and awful. And I deleted it like a month later. But I think I have like three on there now, which is not a lot, and I've been on TikTok since pre-COVID,
which is embarrassing. But yeah, like, TikTok took me a while to get into. And I think I've done it like, Instagram, back when Instagram came out. I was in high school, I think high school or middle school, and all my friends got it, and I was like, “I think this is going to be a phase that passes,” and after a couple of months. Like oh, people are actually using it. I guess I’ll get one, and I did the same thing with Snapchat honestly.

Rachel shared a similar experience when experiencing a trial period with the platform Twitter.

Rachel: I think this is so funny, because I think there's a tweet that went around Twitter a couple of years ago that was like the stages of Twitter. “You download it. You think it's stupid. You're off of it for 3 months. You get back on. You love it” So, I think that Twitter is the only one that I ever had a trial period with, necessarily that I was like, “I don't like this,” and when I came back and liked it. Everything else, I think especially like for my age, I mean I was twelve when I got Facebook, and it was like begging your parents. I was in that age group, and I'm assuming you were too, where it wasn't new to us, like it was something you almost had to have. It was like, oh, everyone else has Facebook, like I have to get one, too. I have to get an Instagram. I have to do this. So, I never had that trial period. I can see where other people, and I don't think that there will be people behind us doing trial periods… So, I think, with new apps, you'll see that trial period, but with things like Facebook, unless it's an older generation, like people
our age and younger, I don't think... I think that's just going to be almost like a thing that you have and do.

Cassandra had experience using Facebook for years. She felt she didn’t have much of a trial period for utilizing Facebook, but she shared that during the “trial period” for the farm page, she had some nerve-wracking feelings.

Cassandra: Not really. I mean, I guess I got Facebook, maybe whenever I was in college, so I had experience for that. And then here in the past I don't know three years like I've created one for the farm, and we just kind of became more active through that and update, well we attempt to update more regularly, but sometimes that doesn't always happen… It was kind of nerve racking because you didn't really know what to post. You didn't want to post too much information because I mean, there are crazy people out there, and you don't want them showing up to your farm. And then, I mean, what do you post? There's like a certain line, I mean, do I want to post a picture of a ewe lambing or will people [find] that offensive and report me, or something like that?

Observability

Observability refers to how visible the results of an innovation are to others (Rogers, 2003). This theme emerged throughout all the interviews. Two sub-categories also emerged, which included social media use by others and personal use informing producer use.

Rachel shared her experience of having seen social media use by others in the agricultural industry.

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Rachel: My favorite thing, I have a friend from Idaho that definitely, for agriculture advocacy, like I have a friend from Idaho. She was a state officer, the same that I was, and every Friday she is an “Ag Fact Friday,” and has, like the option on Instagram on an Instagram story to like to answer that question, and I think it's so easy to push agricultural literacy through social media platforms, and watch it evolve and be something great for like our industry, and then for consumers as well.

Savannah shared an interesting perspective using the Facebook page for the commodity organization she works for.

Savannah: I think sometimes it's like a rollercoaster of who sees your posts and who doesn’t. Like, sometimes I’ll post things on, for example, for the [ORGANIZATION’s] page, and it'll get ten views, which is not really great, considering how large the organization is. And sometimes I’ll post, and we'll get like 10,000 views. So, it's sometimes just discouraging to be like nobody saw it. But then again, every once in a while, you'll have something that will really pick up, and people will see.

Cassandra shared both positive and negative results of using social media as an agricultural producer.

Cassandra: Well, one negative is if someone reads the comments, and you don't catch it in time to delete it, or hide it, other people can see it. So, like one person bashed us because we are not solely grass-fed beef. We're grass-fed and grain finished. So, she just thought that was the most awful thing ever, and she left a
pretty nasty comment on there saying that we are killing the environment, and we're killing the people and blah blah blah! So other than that, I think that was really our only negative experience. Definitely positive is we can post events and people can share it. We can also offer prizes, like I share our page and you can win a prize or something like that.

William shared the results that he has experienced while using social media as an agriculture teacher.

**William:** I guess the most positive thing is all the great comments that I get back from parents, relatives, grandparents. When we're doing FFA things, you know. Of course, when we do trips, we try to post pictures of things the kids have done, and it's just yeah, you get all these likes, and you may get 100 comments. And so, you really get the feeling that as a teacher, what you're doing is being appreciated, and it helps to motivate you to want to do more of that and share more of your program. And so yeah, that's a good back and forth positive influence there. Can't really say I've had too many negatives. You know any of us in the teaching business, there's always going to be naysayers out there that kind of, you know, lash out, maybe at the whole school, and they'll lump teachers, you know, of doing a poor job when that's not the case. But you know that's happened in other forms of media forever. So, it's just rather not taking a week to appear in the newspaper, it happens. My social media experience has been good for the most part.
Summary of Research Objective 3

Rogers’ (2003) perceived characteristics of an innovation can help determine if an innovation will be adopted in a society. All five attributes were discussed and emerged as themes throughout the interviews. Social media was perceived to be better than print media, thus having a high level of relative advantage. Participants noted social media was cheaper and faster than print media, and also allowed an instantaneous level of networking. Social media was perceived as easier to use for younger generations, and more difficult for older generations. Complexity also was dependent on the application and knowledge of users. The compatibility of social media was determined by the producers. Social media was quite compatible with utilizing it for businesses, however, some participants noted that it was not always compatible with completing tasks on the farm, owing to the lack of cell phone service and internet connection. Participants noted that they did not really experience a trial process because most of them have had personal Facebook pages for a while. They did note the trial period in newer applications like TikTok, and a trial period for Twitter since it’s different from other platforms. Finally, participants were able to observe other producers using social media. In addition, they also mentioned that their personal experiences and use of social media has informed their professional use.

Research Objective 4

The fourth research objective intended to describe the barriers of West Virginia agricultural producers implementing social media into their operations. Though the producers interviewed all utilized social media, their insight to this question was useful
for the purpose of this study. Three themes emerged during the open coding analysis process: 1) accessibility; 2) generational barriers; and 3) time. Sub-categories relating to the three themes were identified during axial coding and are listed in Table 4.13.

**Table 4.13. Coding for research objective 4 – barriers of adopting social media by agriculture producers**

<table>
<thead>
<tr>
<th>OPEN</th>
<th>AXIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accessibility</td>
<td>• Access to internet</td>
</tr>
<tr>
<td></td>
<td>• Access to negative ideas</td>
</tr>
<tr>
<td>Generational barriers</td>
<td>• Age</td>
</tr>
<tr>
<td></td>
<td>• Lack of knowledge</td>
</tr>
<tr>
<td>Time</td>
<td>• Time to use</td>
</tr>
<tr>
<td></td>
<td>• Time to learn</td>
</tr>
</tbody>
</table>

**Accessibility**

Two sub-categories emerged relating to accessibility. These include access to the internet and access to negative ideas. Some of the producers alluded to the concept of lack of accessibility for agricultural producers in West Virginia. There are areas within the state that do not have internet access or cell phone service. Two participants specifically stated their experiences with lack of accessibility and how this affects producers' social media usage.

Rachel brought up her experience as a program coordinator and working with other producers, and more specifically, cultural differences with the Mennonite community. She stated:
**Rachel:** I think the barriers… like specifically in West Virginia and rural America, it's really hard with people that don't have access to internet. and then on the flip side of that, that's this isn't something that we necessarily have to worry about in Morgantown, and you're probably not going to see like a whole lot, but specifically like in my role. There’re parts in Virginia and they're starting to pop up in West Virginia, too, but with the Mennonite community. Where they have, they don't use social media.

Cassandra lives in a rural part of West Virginia where they do not have cell phone service, so without Wi-Fi, using social media is challenging. She added:

**Cassandra:** The hardest part for us is, we don't have cell phone service here, so the only time I’m really able to post stuff is when I’m inside, and we really can't go live like at the barns or anything. Yeah, I can take videos, and then come back to the house and post it. But it takes two hours to post a video or something. So that’s a downfall for us, but if we were in cell phone service and had access to that, I do think it would be really beneficial [to use social media for an operation].

William stated some of his own personal barriers of utilizing social media and included this idea of access to negative things on social media and the internet. He said, “I guess the access to negative things that can go on there would be another barrier for me not wanting to maybe use it as much.” William also mentioned the idea of having your personal information being accessible to others on the internet can be another barrier for him.
**William**: That’s the one thing I don't like. I don't like the fact that you know the world can kind of track you and monitor your habits. You're buying trends, probably we put more out – the more know about us out there, maybe more than we would ever suspect or want, but that's just kind of, I guess the price we pay for being in the know.

William also brought up that friends his age also express concerns with utilizing social media and the internet to be able to access their own personal information. He too shared this worry but combats it by not using credit cards or other personal information on websites.

**William**: I still have friends that are my age that they won't even send a text just because they're concerned that you know…They just don't want any link to the outside world it could be somebody could come after them. But I've kind of gotten through that. And it is what it is. I guess you call that bridge if it happens to you, but still try to be, you know, fairly responsible and safe with it. Don’t put a card number or social security numbers out there too much.

**Generational barriers**

Participants concurred another immense barrier to social media usage is generational differences. Two sub-categories emerged within this theme relating to age and lack of knowledge of social media use. Savannah echoed both of these sub-categories.
Savannah: I think people don't necessarily know how to use it, so they might not be utilizing it to its supposed to extent and wondering why they're not having as much success on there. Which you know it's harder with older generations of farmers and trying to convince them that change is a good thing, and that it can help actually grow the business.

Rachel mentioned the interactions with other agriculturists in her role and her belief on the barriers, also mentioning the lack of knowledge of social media with older generations.

Rachel: Especially in my role like the older generation. There's a lot of people who don't use social media platforms, or if they do, they're not really sure like how to use them. So, like my dad has Facebook, and he could be trying to like share something to like me. But then, like post it on his actual Facebook, or like, like my dad has hundreds of friends on Facebook, and that's because he thought that people were sending him friend requests. But he was sending the friend request. So, I think the barriers just like the knowledge with like older farmers.

Rachel also stated that farmers could be stuck in their ways. She said, “A lot of farmers are not necessarily apt to try new things. You know they're very set in their ways, and they don't want to try new things.”

William referenced his personal barriers when it comes to using social media. William is older than the other participants, so this outlook was very interesting to consider. He stated, “Well, probably the biggest barrier would be, you know my knowledge of the platforms and how to use them.”
Time

Cassandra mentioned the biggest barrier for her to use social media sometimes is the time. She stated, “probably just the time, and you can become easily sucked into the social media platform. I get on there for literally 2 minutes, and I’m on there for 10.” Cassandra also mentioned that agricultural producers, especially older ones, are less likely to have the time to learn how to use social media. She mentioned,

Cassandra: Well, I don’t want to say older, but like my dad. My dad is not going to go to a training and learn how to use Facebook and I don’t know. I mean most farmers out there, they’re so busy they’re not going to take time to do it. But I feel like the younger people, like my age, and I don’t know, even in their thirties, they would be more apt to do it.

William alluded to being guilty of spending too much time on social media. He stated, “we're guilty of spending too much time on our social media when we should be doing work. Of course, you know, with young folks, I'm always telling my daughter and sons, put the phones down till we get chores done.”

Summary for Research Objective 4

The main barriers to adopting social media that emerged during these interviews included accessibility, generational differences, and the instance of time. In some parts of West Virginia, there is no access to internet or cell phone service, thus making usage of social media difficult for individuals and producers in rural areas. One of the participants brought up the idea of access to negative things on social media, which can cause hesitation to use, especially with the older generation. These generational differences are
also another barrier to social media use by agriculture producers. Because of social media not being around long during much of these agriculturists’ lives, they have had a hesitation or lack of willingness to learn how to use social media for personal and professional use, therefore creating a barrier relating to lack of knowledge due to their unfamiliarity of social media. Finally, the last theme related to the concept of time. Cassandra and William both mentioned that social media takes time to use and time to learn, and it’s quite easy to get distracted and spend almost too much time on social media, rather than completing chores on the farm. Cassandra also mentioned that the older generation may have difficulties wanting to learn about social media because they just do not have the time, and do not feel the need to make the time to learn.
Chapter 5. Conclusions

The purpose of this study was to examine the social media use by West Virginia agricultural producers. The following objectives guided the study:

1. Describe the willingness to adopt social media by West Virginia agricultural producers [QUANT];
2. Describe the utilization of social media by West Virginia agricultural producers [QUANT/QUAL];
3. Describe the perceived characteristics of social media, according to Rogers (2003), by West Virginia agricultural producers [QUANT/QUAL]; and
4. Describe the barrier(s) of implementing social media by West Virginia agricultural producers [QUAL].

This study provided valuable insight on agricultural producers’ utilization of social media, barriers of adoption, overall perceptions of social media, and willingness to adopt social media.

Objective 1 Conclusions

Research objective one sought to describe the willingness to adopt social media by agricultural producers in West Virginia. This objective was primarily examined through the survey instrument since it included both adopters and non-adopters in the sample. Overall, producers neither agreed nor disagreed when measuring the willingness
to adopt social media into their operations. More specifically, producers felt neutral about learning how to use social media through training or from other producers. Producers indicated that they somewhat disagreed with the statement, *I would be willing to use social media for my operation, but I don’t know how.* The standard deviations for these statements were also very large, which once again indicates various feelings about adopting social media as an agricultural producer.

**Objective 2 Conclusions**

Research objective two focused on describing the utilization of social media by West Virginia agricultural producers. When asked to indicate if they used social media for personal uses, 75% of respondents said yes. On the other hand, 57% of respondents indicated they used social media for professional use. When using social media, a large percentage (75%) of producers indicated they connected to social media with their smartphones. A majority of respondents stated that Facebook and YouTube are the important social media applications for agriculturists to utilize. Overall, producers *neither agreed nor disagreed* with utilizing social media as agricultural producers. There was a large standard deviation with this construct which indicates a range of feelings among different producers.

While conducting the interviews to further explain and understand from the producers’ perspective, interview respondents elaborated on the knowledge of using social media. This knowledge varies from producer and from social media applications, thus explaining the large standard deviation. The main reasons producers used social media was to tell their agricultural story and to communicate with various audiences. It
was important for the producers to advocate for and educate others about the industry and their operations.

**Objective 3 Conclusions**

Research objective three sought to describe the perceived characteristics, as listed in Rogers (2003), of social media usage by agricultural producers in West Virginia. These perceived characteristics include relative advantage, complexity, compatibility, observability, and trialability. In addition to those five characteristics, the instrument that was utilized was adapted from Moore and Benbasat (1991) and also measured result demonstrability and visibility, replacing observability. In the instrument that was administered, participants indicated they *somewhat disagreed* in regard to their perception of the following characteristics of social media: relative advantage, ease of use (complexity), compatibility, and trialability. On the contrary, producers *neither agreed nor disagreed* in regards to the characteristics of result demonstrability and visibility. Once again, these findings also had large standard deviations, indicating the difference in responses from producers.

When delving deeper into these characteristics during the interviews, the participants felt that social media was perceived as relatively more advantageous than print media. Interviewees echoed that social media was practically free of cost, is a way to instantly communicate with their audiences, is faster than print media, and is beneficial when keeping up to date with various aspects. Complexity varied among producers. The younger producers indicated that social media applications tend to be easier for them to use since they grew up as social media has evolved. In addition, the complexity level of
social media was dependent on the application and familiarity of the application among users. Compatibility was also another characteristic that varied based on context. Social media was compatible with businesses and helped producers gain a broader audience and increased awareness of their operations, however, it wasn’t always compatible when producers didn’t have access to internet or cell phone service.

In the interviews, the participants indicated that they observe many other producers using social media in various ways. Additionally, it was also interesting to note that their personal use and knowledge of social media informed their producer, or professional, use of social media. Therefore, they were more apt to use social media because of their personal experiences prior to using social media professionally. Finally, the characteristics of trialability were interesting to note. William, the oldest producer in the interview, had more of a trial experience using social media, whereas Cassandra, Rachel, and Savannah all had not experienced using a trial period until apps like Twitter and TikTok came along. Cassandra also mentioned her operation was recently using Instagram, so she was currently experiencing a trial period with that specific application.

**Objective 4 Conclusions**

Research objective four focused on describing the barriers of adopting social media by agricultural producers in West Virginia. This objective was primarily explored in the in-depth interviews conducted with the four agricultural producers outlined in chapter four. Though these producers all used social media, they all identified barriers that affected their use of social media and also spoke of barriers that other producers have echoed. These barriers included access to cell phone and internet service in rural parts of
the state, generational barriers relating to knowledge of using social media, and the increased amount of time necessary to devote to social media application. There are still locations in West Virginia that struggle to connect to the virtual world because of the lack of access to internet and cell phone service. In fact, one participant indicated that she can only post on social media from her house where she has WiFi because there is no service in the county where she resides. The generational barriers that were brought up indicated that the younger generations of agriculturists grew up with social media, so it was almost innate for them to learn and use this technology; however, that is not the case for older generations in the state. The lack of knowledge surrounding social media usage was a distinct barrier of adoption that was addressed. In addition, the idea of producers being set in their ways and doing things the way they have always done them was consistently mentioned. The final barrier was the instance of time. Social media can take a substantial amount of time to use depending on the action you are completing. This time is not something that all producers see value in using because they simply don’t have the extra time to allot utilizing social media. Additionally, taking the time to learn social media was also a factor that was mentioned. The different applications have different functionalities and aspects to them, thus creating multiple details to consider when learning how to use social media. Producers who have not seen the benefits of social media don’t want to put in the time to learn how to use these applications.

Through the analysis of data, the findings suggested several discussion points, implications, and recommendations.
Discussion, Implications, and Recommendations

There was much variation on West Virginia agricultural producers’ utilization of social media. This is consistent with the findings from Telg and Barnes (2017), where members of the Florida Farm Bureau Young Farmers & Ranchers had opposing views on social media in the two separate focus groups. One group felt a level of discomfort using social media, whereas the second group used social media as a part of their everyday routines; however, both groups saw the benefits of using social media (Telg & Barnes, 2017).

In regards to the utilization objective, one of the most prevalent themes to emerge through the interviews is the idea of telling the agriculture story. Social media usage has allowed these producers to not only market their products, but also communicate and distribute educational information pertaining to the agricultural industry (Meyers et al., 2014; Stanley, 2013). Small businesses are profiting financially and reputably from the adoption of social media (Webb & Roberts, 2016), an opportunity West Virginia agricultural producers should consider.

Producers felt online training sessions to learn about social media for their operations would not be beneficial; however, producers also reported they neither agreed nor disagreed that they had the knowledge and resources necessary to use social media. It is recommended that agricultural outreach and programming services, like the Cooperative Extension Service, provide more resources regarding social media usage for agriculture producers. In addition, further research should be conducted to determine what types of training programs and/or resources agriculture producers need to manage.
and operate social media pages for their agricultural operation. More resources and knowledge could impact the adoption of social media by agricultural producers.

The producers who were interviewed all utilized social media but were also aware of barriers that could potentially affect adoption for others such as knowledge, lack of resources, and generational differences as found in previous studies (Carroll et al., 2022; Moreno-Ortiz et al., 2021). Specifically, these generational differences include preference of communication channels. The study conducted by Carroll et al. (2022) indicated Extension Service clientele over the age of 50 utilized newspaper and word of mouth for preference of communication channels, whereas clientele under 50 used social media and the internet. Further research is recommended to look into generational social media usage differences.

Another important barrier and discussion point that was brought up during the interviews was the aspect of accessibility to internet and cell phone service. Cassandra indicated her struggles with using social media only in specific places that she has access to. Living in a digital age, internet access is almost vital for education, employment purposes, and day-to-day functioning. The USDA-NASS (2021) reported that 73% of farms in West Virginia had access to the internet, which is below the national average at 82%. This is not an issue that only West Virginia faces but encompasses surrounding states within the Appalachian region. The Appalachian region was five percentage points below the national average of broadband access (Population Reference Bureau (PBR), 2023). Many Appalachian residents are at a disadvantage due to this digital gap (PBR, 2023). Further research should be conducted to explore the differences of social
media/technology usage in Appalachia versus other regions in the country. Recommendations for practice would be to continue working toward the broadband and internet access issue that impacts the rural parts of West Virginia and the Appalachian Region.

The variance in the producers’ perceived characteristics of social media and willingness to adopt can be discussed by noting that some attributes are important in specific contexts and individuals depending on the innovation. Rogers (2003) stated that diffusion scholars should be open to exploring other attributes that may affect an individual’s need or want to adopt a specific innovation. Individuals who simply have no interest in adopting will perceive the innovation poorly. Specifically, the *complexity* attribute of social media has been explored in previous studies. Meyers et al. (2014) found that agriculturists had a lower level of competence of more *complex* social media aspects. These perceived attributes of social media ultimately affect the rate of adoption (Rogers, 2003). Further research should be conducted to examine specifically laggards’ perceptions of social media.

Another area that affects the rate of adoption is the concept of communication channels (Rogers, 2003), an additional area of exploration that emerged during interviews. Mass media channels are means of transmitting messages through a mass medium, such as television, newspapers, and social media, whereas interpersonal channels involve a face-to-face exchange between two or more people (Rogers, 2003). One participant indicated that they host a farm management institute in West Virginia and Virginia. They pointed out West Virginia’s farm business management course was
primarily advertised and communicated via interpersonal communication channels, while Virginia’s course was primarily advertised via mass media channels. Rogers (2003) stated cosmopolite communication channels link an individual with an outside source of the social system. Mass media channels are entirely cosmopolite, whereas interpersonal channels can be either local or cosmopolite. Cosmopolite channels are important in the knowledge stage of the Innovation-Decision process and localite channels are important during the decision stage (Rogers, 2003). Further research is recommended to determine the level of cosmopolite communication West Virginia producers are receiving in comparison to a more cosmopolite state. In addition, cosmopolite communication can be compared between more rural and urban counties of West Virginia.
References


Dear Prospective Participant,

This letter is a request for you to participate in a research project to determine the utilization of social media applications in West Virginia agricultural operations, along with the following objectives: 1) Describe the utilization of social media by West Virginia agricultural producers; 2) describe the barriers of implementing social media by West Virginia agricultural producers; 3) describe the perceived characteristics of social media by West Virginia agricultural producers; and 4) describe the willingness to adopt social media by West Virginia agricultural producers. This project is being conducted by Mikayla Hargis, B.S. in the Agricultural and Extension Education Department at WVU, under the supervision of Dr. Haley Rosson, an Assistant Professor in the Agricultural and Extension Education Department, to fulfill requirements for a master’s degree in Research.

If you decide to participate, you will be asked to complete a survey containing both multiple choice questions and Likert-scale type questions. Your participation in this project will take approximately 10 minutes. You must be 18 years of age or older to participate.

Your involvement is anonymous. All data will be reported in the aggregate. You will not be asked any questions that could lead back to your identity as a participant. Your participation is entirely voluntary. You may skip any question that you do not wish to answer, and you may stop participating at any time. Your employment status will not be affected if you decide not to participate or withdraw. The West Virginia University Institutional Review Board’s approval of this project is on file with the WVU Office of Human Research Protections.

If you have any questions about this research project, please feel free to contact me by email at mrh0037@mix.wvu.edu or Dr. Haley Rosson at haley.rossson@mail.wvu.edu. Additionally, you can contact the WVU Office of Human Research Protections at 304-293-7073.

I hope that you will participate in this research project, as it could help us better understand the utilization and barriers to adoption of social media by agricultural producers and help provide future resources to producers. Thank you for your time and consideration.
Sincerely,

[Signature]

Mikayla Hargis
Appendix B. Instrument

Social Media Usage by West Virginia Agricultural Producers

Q1 Do you directly engage in the production of an agricultural commodity in West Virginia (e.g., farmers, ranchers, loggers, agricultural harvesters, and fishermen that engage in the production or harvesting of an agricultural product)?

- Yes
- No

Q2 What type of operation do you have as a producer?

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wholesale</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct Market</td>
<td></td>
<td></td>
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<tr>
<td>On Farm Sales</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retail</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Broker</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (Please Specify)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q3 Do you currently use social media for personal use?

- Yes
- No
Q4 (If yes) On average, how many hours per week do you spend on social media sites for personal use?

- 0-2 hours
- 3-4 hours
- 5-6 hours
- 7-8 hours
- 9-10 hours
- 11+ hours

Q5 Do you currently use social media for professional use?

- Yes
- No

Q6 (If yes) On average, how many hours per week do you spend on social media sites for professional use?

- 0-2 hours
- 3-4 hours
- 5-6 hours
- 7-8 hours
- 9-10 hours
- 11+ hours
Q7 Which of the following devices do you connect to social media sites with?

<table>
<thead>
<tr>
<th>Device</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Desktop PC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laptop Computer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>iPad or Tablet computer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smartphone (with internet)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (Please Specify):</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q8 Based on your personal knowledge and experiences with social media, please select any social media sites which you believe would be useful as an agricultural producer to facilitate communication and information sharing with various audiences.

<table>
<thead>
<tr>
<th>Social Media Site</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facebook</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instagram</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Twitter</td>
<td></td>
<td></td>
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<tr>
<td>YouTube</td>
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<tr>
<td>Snapchat</td>
<td></td>
<td></td>
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<tr>
<td>TikTok</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Online Blog</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (Please Specify):</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Q9 Do you, or the agricultural producer you work for, utilize social media to interact with various audiences?

- Yes
- No

Q9A (If yes) How are social media sites utilized within your operation?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct communication with audiences (i.e., sharing Facebook messages, Instagram direct messages, Twitter direct messages)</td>
<td></td>
</tr>
<tr>
<td>In-direct communication with audiences (i.e., posting to an agriculture interest group, sharing information via Twitter post updates, Instagram post updates, or Facebook post updates)</td>
<td></td>
</tr>
<tr>
<td>Sharing/Mass Communication (i.e., creating an agricultural focused blog, Facebook page, YouTube account, to share general information with a large group)</td>
<td></td>
</tr>
<tr>
<td>Other (please describe)</td>
<td></td>
</tr>
</tbody>
</table>

Q9B (If no) Have you, or your employer, considered using social media in the future?

- Yes
- No
Q10 How important do you believe it is for agricultural producers to actively engage in social media?

- Not at all important
- Slightly important
- Moderately important
- Very important
- Extremely important

Q11 Please indicate your level of agreement to the following statements.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly disagree</th>
<th>Somewhat disagree</th>
<th>Neither agree nor disagree</th>
<th>Somewhat agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have the resources necessary to use social media.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have the knowledge necessary to use social media.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel apprehensive about using social media.</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>I hesitate to use social media because of online privacy concerns.</td>
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</tr>
</tbody>
</table>
Q12 Are you aware of any social media training programs available to help you use social media for your operation?

- Yes (Please specify):

- No

Q13 Please indicate your level of agreement with the following statements. As an agricultural producer...

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly disagree</th>
<th>Somewhat disagree</th>
<th>Neither agree nor disagree</th>
<th>Somewhat agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have no interest in using social media for my operation.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>I would be willing to use social media for my operation, but I do not know how.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>I would be willing to participate in an online training session to learn how to use social media for my operation.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>I would be willing to attend a regional training meeting to learn how to use social media for my operation.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>I would be willing to learn about social media and then share my knowledge with fellow agricultural producers.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>
Q14 Please indicate your level of agreement with the following statements.
As an agricultural producer...

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly disagree</th>
<th>Somewhat disagree</th>
<th>Neither agree nor disagree</th>
<th>Somewhat agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using social media enables me to accomplish tasks more quickly.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Using social media improves the quality of work I do.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Using social media makes it easier to do my job.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Using social media enhances my effectiveness on the job.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Using social media gives me greater control over my work.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q15 Please indicate your level of agreement with the following statements.
As an agricultural producer...

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly disagree</th>
<th>Somewhat disagree</th>
<th>Neither agree nor disagree</th>
<th>Somewhat agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using social media is compatible with all aspects of my work.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I think that using social media fits well with the way I like to work.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Using social media fits into my work style.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Q16** Please indicate your level of agreement with the following statements.
As an agricultural producer...

<table>
<thead>
<tr>
<th>Opinión</th>
<th>Strongly disagree</th>
<th>Somewhat disagree</th>
<th>Neither agree nor disagree</th>
<th>Somewhat agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I believe that social media is difficult to use.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Using social media is often frustrating.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I believe that it is easy to get social media to do what I want it to do.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall, I believe that social media is easy to use.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning to operate social media is easy for me.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Q17** Please indicate your level of agreement with the following statements.
As an agricultural producer...

<table>
<thead>
<tr>
<th>Opinión</th>
<th>Strongly disagree</th>
<th>Somewhat disagree</th>
<th>Neither agree nor disagree</th>
<th>Somewhat agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I would have no difficulty telling others about the results of using social media.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I believe I could communicate to others the consequences of using social media.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The results of using social media are apparent to me.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I would have difficulty explaining why using social media may or may not be beneficial.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Q18 Please indicate your level of agreement with the following statements. As an agricultural producer...

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly disagree</th>
<th>Somewhat disagree</th>
<th>Neither agree nor disagree</th>
<th>Somewhat agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>In my organization, I see social media being utilized.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Social media is not very visible in my field.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

Q19 Please indicate your level of agreement with the following statements. As an agricultural producer...

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly disagree</th>
<th>Somewhat disagree</th>
<th>Neither agree nor disagree</th>
<th>Somewhat agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before deciding whether to use social media applications, I was able to properly try them out.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>I was permitted to use social media on a trial basis long enough to see what it could do.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

Q20 Please indicate your gender.

- Male
- Female
- Other (Please specify)

92
Q21 Please select your age group.

- 18-24 years
- 25-34 years
- 35-44 years
- 45-54 years
- 55-64 years
- 65-74 years
- 75 years or older

Q22 Are you of Hispanic or Latino origin?

- Yes
- No

Q23 Which of the following best describes your race?

- White
- Black or African American
- Asian or Pacific Islander
- Native American or Alaskan Native
- Other (Please specify): [ ]

Q24 Would you be willing to participate in a one-on-one interview to allow for further data collection?

- Yes
- No
Q24A (If yes) Please provide your name and preferred contact information (phone number and/or email).
Appendix C. Additional Tables

Result demonstrability construct by item

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>I would have no difficulty telling others about the results of using social media.</td>
<td>3.27</td>
<td>1.11</td>
</tr>
<tr>
<td>I believe I could communicate to others the consequences of using social media.</td>
<td>3.30</td>
<td>1.09</td>
</tr>
<tr>
<td>The results of using social media are apparent to me.</td>
<td>3.25</td>
<td>1.06</td>
</tr>
<tr>
<td>*I would have difficulty explaining why using social media may or may not be beneficial.</td>
<td>3.19</td>
<td>0.78</td>
</tr>
<tr>
<td>Overall result demonstrability average</td>
<td>3.22</td>
<td>0.73</td>
</tr>
</tbody>
</table>

* Indicates reverse coded items

Note. Likert Scale: 1 = Strongly Disagree, 2 = Somewhat Disagree, 3 = Neither agree nor disagree, 4 = Somewhat Agree, 5 = Strongly Agree

Complexity construct by item

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>*I believe that social media is difficult to use.</td>
<td>2.86</td>
<td>1.25</td>
</tr>
<tr>
<td>*Using social media is often frustrating.</td>
<td>2.39</td>
<td>1.28</td>
</tr>
<tr>
<td>I believe that it is easy to get social media to do what I want it to do.</td>
<td>3.05</td>
<td>1.16</td>
</tr>
<tr>
<td>Overall, I believe that social media is easy to use.</td>
<td>3.23</td>
<td>1.22</td>
</tr>
<tr>
<td>Learning to operate social media is easy for me.</td>
<td>3.05</td>
<td>1.21</td>
</tr>
<tr>
<td>Overall complexity average</td>
<td>2.91</td>
<td>0.95</td>
</tr>
</tbody>
</table>

Note. Likert Scale: 1 = Strongly Disagree, 2 = Somewhat Disagree, 3 = Neither agree nor disagree, 4 = Somewhat Agree, 5 = Strongly Agree

* Indicates reverse coded items
Relative advantage construct by item

<table>
<thead>
<tr>
<th>Item</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using social media enables me to accomplish a task more quickly.</td>
<td>2.84</td>
<td>1.35</td>
</tr>
<tr>
<td>Using social media improves the quality of work I do.</td>
<td>2.80</td>
<td>1.36</td>
</tr>
<tr>
<td>Using social media makes it easier to do my job.</td>
<td>2.91</td>
<td>1.34</td>
</tr>
<tr>
<td>Using social media enhances my effectiveness on the job</td>
<td>2.88</td>
<td>1.36</td>
</tr>
<tr>
<td>Using social media gives me greater control over my work.</td>
<td>2.80</td>
<td>1.37</td>
</tr>
<tr>
<td>Overall relative advantage average</td>
<td>2.85</td>
<td>1.27</td>
</tr>
</tbody>
</table>

Note. Likert Scale: 1 = Strongly Disagree, 2 = Somewhat Disagree, 3 = Neither agree nor disagree, 4 = Somewhat Agree, 5 = Strongly Agree

Trialability construct by item

<table>
<thead>
<tr>
<th>Item</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before deciding whether to use social media applications, I was able to properly try them out.</td>
<td>2.70</td>
<td>1.02</td>
</tr>
<tr>
<td>I was permitted to use social media on a trial basis long enough to see what it could do.</td>
<td>2.51</td>
<td>1.05</td>
</tr>
</tbody>
</table>

Note. Likert Scale: 1 = Strongly Disagree, 2 = Somewhat Disagree, 3 = Neither agree nor disagree, 4 = Somewhat Agree, 5 = Strongly Agree
Compatibility construct by item

<table>
<thead>
<tr>
<th>Statement</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using social media is compatible with all aspects of my work.</td>
<td>2.59</td>
<td>1.26</td>
</tr>
<tr>
<td>I think that using social media fits well with the way I work.</td>
<td>2.50</td>
<td>1.44</td>
</tr>
<tr>
<td>Using social media fits into my work style.</td>
<td>2.68</td>
<td>1.51</td>
</tr>
<tr>
<td>Overall compatibility score</td>
<td>2.59</td>
<td>1.34</td>
</tr>
</tbody>
</table>

*Note. Likert Scale: 1 = Strongly Disagree, 2 = Somewhat Disagree, 3 = Neither agree nor disagree, 4 = Somewhat Agree, 5 = Strongly Agree*
Appendix D. Interview Protocol

Introduction -

“First, I would like to thank you for your participation thus far in this study. Your participation is very much appreciated. The first part of this study began with the survey you took at the West Virginia Farm Bureau meeting on November 13-15. The next part of the study consists of an interview that will last approximately one hour. Your participation is completely voluntary, and you may choose to stop at any time. Do you have any questions before we begin? Do you mind if I record the interview? It will only be shared with a team of qualified researchers, and your responses will remain anonymous.”

Guiding Questions -

Utilization of Social Media

1. In the survey you took at the West Virginia Farm Bureau Conference, you indicated that you use social media for both personal and professional use. Describe how you utilize social media for professional use?
2. Your response indicated that (Facebook, Instagram, Twitter, YouTube, Snapchat, TikTok, Online blog) would be useful to use as an agricultural producer. Based on your knowledge and experience
3. What are some advantages of using these platforms?
4. What are some barriers to using these platforms?
5. Why do you believe it is important for agricultural producers to actively engage in social media?

Willingness to Adopt

6. Which resources, if any, have you used to help you manage social media pages?
7. Did these resources positively impact your opinion on using social media for professional work? If so, how?
8. Do you think social media training would encourage more individuals to adopt social media into their operations? If so, what type of training do you believe would be beneficial for West Virginia Agricultural Producers?
9. Describe a time where you shared your experience in using social media with a fellow agricultural producer?
Perceived Attributes

Relative Advantage
10. What advantages do you believe social media has over print/traditional media?

Compatibility
11. Explain how compatible social media is, or isn’t with your agricultural operation?

Complexity
12. What are social media platforms that you believe to be easy to use?
13. Difficult to use?
14. What aspects of these platforms are easy to use?
15. Difficult to use?

Result Demonstrability/Observability
16. What are some results you have experienced from using social media?

Trialability
17. Did you experience a “trial period” of using social media before deciding to adopt?
18. If yes, explain your feelings during this trial period.
19. If not, do you think a trial period would have been beneficial?

20. Do you have any additional information pertaining to this research that you would like to add?

21. Do you have any questions for me?
Appendix E. Interview Transcripts

Rachel

Mikayla: In the survey that you took at the West Virginia Farm Bureau Conference, you indicated that you use social media for both personal and professional use. Could you describe how you use social media for professional use?

Rachel: So, I don't necessarily like, have, like, I don't use our accounts per se like on my own. But I am helping put together things for our social media. So, there's another lady that works for us that does the social media stuff. But like as an event planner, I put together the communication plan. So, we have an event in March. I have created a word document that says what I want the post to say, what the post will entail, and what date I want that post to be on -be published, and then also like what platform I wanted on. So, I use it in that way, in terms of communication, and I’m not necessarily the one that's posting it. But I would still say I’m involved in that social media process. I also feel like I use social media to find new things for me to do it work so like, just even on my own personal time, like following different agricultural social media platforms, to gain ideas and insights to bring back to my job.

Mikayla: For the purposes – for the purpose of this can you just explain what your role is?

Rachel: So, I am an event plan - event coordinator: a program coordinator for [an agriculture advocacy group]. So, I plan events for it's mostly for producers in our footprint. So, we cover 96 counties between West Virginia, Virginia and Maryland and I plan those events, and then also create different infographics resources for both farmers producers and then also educators.

Mikayla: Awesome. Thank you. Okay, so in your survey response that you took, you indicated that Facebook, YouTube, TikTok, and an online blog would be useful to use as an agricultural producer. So, based on your knowledge and experience – experiences, what are some advantages of using these platforms?

Rachel: I think that it's easy to share things like with friends and family members. So, especially on Facebook. You may be friends with somebody that you met from a different conference or something like that, and they may have no agricultural background, but being able to share things on social media, and I think it all comes
together so like things that you see on YouTube or in a blog you can post on your own Facebook. So just being able to share with people that wouldn't normally see it.

**Mikayla:** Okay, awesome.

**Rachel:** I think I am getting phone call. I'm so sorry I don't know what's going on. Oh, my God! Did it answer? Okay, I think it went away. Okay, it says, missed. But then it came up green because I’m on zoom, and I thought that it had answered the call. I don't know what just happened. Okay, if they need me, I guess they’ll leave a message. I'm so sorry about that like, I was trying to make it go away. And it went away at the wrong time. Okay, Sorry.

**Mikayla:** I think it’s the new iPhone update, like whatever you - it's like, it's crazy. Okay, and then so, on the contrary, what are some barriers to using these platforms?

**Rachel:** Definitely, like, especially in my role like the older generation. There's a lot of people who don't use social media platforms, or if they do, they're not really sure like how to use them. So, like my dad has Facebook, and he could be trying to like share something to like me. But then, like post it on his actual Facebook, or like, like my dad has hundreds of friends on Facebook, and that's because he thought that people were sending him friend request. But he was sending the friend request. So, I think the barriers just like the knowledge with like older farmers. And then, like specifically in West Virginia and rural America, it's really hard with people that don't have access to Internet. and then on the flip side of that, that's this isn't something that we necessarily have to worry about in Morgantown, and you're probably not going to see like a whole lot, but specifically like in my role. There're parts in Virginia and they're starting to pop up in West Virginia, too, but with the Mennonite community. Where they have, they don't use social media. They don't use, you know they don't... I mean, I think, that Mennonites use electric. But like they, they're not going to be on the platform of the Internet. So that's a barrier there. that we definitely see, like, especially like we do all virtual and online registrations for our events, and people need to register, so that we know you know how much food to have, and things like that, and that is a barrier with that specific community. And then also like, when you have speakers coming, they don't realize that. They don't have a lot of Speakers are used to talking to like college students or people who can use a QR Code and download their PowerPoint slides. And this there's a generation in a community that doesn't do that.

**Mikayla:** Yeah, I definitely like, see that generation gap in a lot of things. So okay, next, one. So why do you believe it's important for agricultural producers to actively engage in social media.
Rachel: I think it's important, because, like I said. It's just such an easy way to share information and learn new things. A lot of farmers are not necessarily apt to try new things. You know they're very set in their ways, and they don't want to try new things, but social media allows them to be able to see. You know what, what is new and what is out there? And then on the flip side of that, if you're not using your voice to advocate for what you do and what you have. Somebody else is going to do it for you, and you don't get to spell out that narrative. So, it's almost like a caution control thing like you want to be able to make sure, especially if you have a business. I mean that depends on people, you know, believing in it, like you need to be able to do that kind of press control, and make sure that there isn't a bad narrative out about you and your industry.

Mikayla: Absolutely. Okay. So, I know you kind of touched base on this a little bit. But throughout like navigating social media usage. Sorry my like Zoom did something really weird. It's still recording. Okay, Sorry. Throughout, like navigating your social media usage and stuff, which resources, if any, have you used to help you manage your social media pages or help you, like create content, or things like that in your role.

Rachel: Okay, wait. Can you repeat the question. I'm sorry.

Mikayla: So, just like which resources, if you have used any, have helped you manage your social media pages?

Rachel: I, like, I said, I don't necessarily like, manage our, our social media pages and things like that, but something that you know I use, and I know that the people in my company a lot, I assume this is what your kind of asking for is things like Canva. We use a lot of Canva to create our infographics and things like that. We do use like analytic data and have something for that. But I well, analytics is interesting to me, and I get like quarterly analytics. I can't remember what it's called that we use, but we definitely, like, refer to analytics and see what words in Google are like important for us to use.

Mikayla: Absolutely. So, do you think these resources positively like impacted your opinion on using social media?

Rachel: Yes,

Mikayla: Okay, so how? How so?

Rachel: Well, Canva for one makes it a lot easier to like create things like that and post them out there. But the analytical data allows us to be able to see what we need to push out there. I think, we use a thing I don't even know what it's called. Where like we can research and see like what words in Google are like important for us to use

Mikayla: It's like the SEO. I forget what the acronym stands for. But yes, yeah.
Rachel: So, we've been able to do that like within, like our titles, our blogs and things like that. And so whenever, there's a couple of things that we have on our website, like resources where we ask people how they heard about it, like they have to request access for it, and how they heard about it. And we've seen, like a huge increase in Google search from, from using things

Mikayla: Awesome. Okay, so in your opinion. Do you think social media training would encourage more individuals to adopt social media into their operations?

Rachel: I think that it depends. If I’m being honest. It's going to be people that already know, feel like they don't need to learn more. And people that don't know who are set in their ways, don't want to be a part of it. I think maybe like advocacy for like safe social media usage, like knowing, you know what, what kind of background you need to have, and what you're putting out there, and things like that. I don't necessarily know of like a training where, like Extension put on, and you went to it. I don't know, I’m not totally involved, I don't know how many people would show up. I think that maybe like a blog or something a newsletter, something in a magazine, something like that that people are like physically reading might be easier for them to interpret and like accept. But or like, even like, if you already had like a meeting into like a 10-minute training, or something like that. I think this is just, personally, I really don't know, but I think it would be really hard to get people to show up for like an hour training on social media usage, especially like through something like Extension. Because I don't know. I just don't know how you get the people there. Like their extension agents would have to know who needs that, and who would be willing to come and like, spend the evening to learn that.

Mikayla: Awesome. Thank you. All right. Next one. Sorry I was trying to, there it is. Okay. So, describe a time where you shared your experience in using social media with a fellow agricultural producer. So, this can be like any type of experience in the workplace in a personal setting. whatever. But if you can think of a specific time

Rachel: Oh, my gosh. I don't necessarily have like a person. Does it have to be like a personal experience, or like just something that like I think of or like, how do you want me?

Mikayla: So, I was like kind of hoping for something a little bit more personal. But I, we can make this whatever, so I I’m-

Rachel: Okay, I’ll just, I'll share. I'll share this because I feel like this is something that's not like I did. So, a couple of years ago, the knowledge center, this was before I even worked for them, they put on a advocacy like “Agricultural Advocacy Webinar” series that I joined. And
okay, I believe it was Brandy Buzzard was the one that had the like picture of her and was like,
I think it was Ellen. I can't remember like the full story, but like it was like you said something about the agriculture like, let me do this. But, anyway, she was one of the speakers.
and she said something in that that Webinar thing that has like stuck with me, and I feel like I share this with other people. But it's when you see bad news about agriculture, or bad news about anything, I mean, this can be related to anything. Don't share it. Like it the more that you share it and show people like, it's not, that’s giving them the engagement they need. So, this kind of like goes back to agriculture, but like with the video of, oh, my gosh, the football player that just got hurt! It was like totally circulating. People were just like sharing it and sharing it, and sharing it, like saying prayers for him, but that you could tell the family was like, stop sharing this video like, just ask for prayers, and it goes like that for like things with agriculture, too. You can advocate and say things, but don’t share the bad with it. If that makes sense. Like when Chipotle came out with that like commercial, like you didn't need to share the commercial with it. Like you didn't need to even, I mean, even if you reference to it. People are going to go look it up on their own, and they don't need to – don't direct people to the bad news. Just start with your own like good news. So, I try to avoid sharing things that are derogatory towards, even if it's like helping. If that makes sense.

Mikayla: That makes me think of, I think we probably were in high school when that, like a PETA AD like went around, and everybody was like sharing it. So, yeah, I think it’s just a good tip to share with people, too, especially thinking about social media and things like that.
Okay. Okay. So, what advantages do you believe social media has over like print media or traditional media?

Rachel: One, it's significantly cheaper. To post things on social media. I mean like to go to Staples is ridiculous, I mean. And even if you're going to like a regular company, or something like that. It's, it's expensive to do print media, where social media is free. So, I think that that has got to be like one of the biggest things, and then it's just a lot easier to share. Like if you send a flyer in the mail to somebody that probably that one family member is going to be the one that looks at it, where, if it's on Facebook, your engagement is going to be a lot higher. So, your ratio for like one post on Facebook is going to see, you know, be seen by hundreds of people where it's kind of a more of a one to one ratio when you're sending out those flyers, and I mean you can put up flyers like throughout the college, or at a restaurant, or something like that, and people may see them, but people are a lot more receptive. Especially our generation, to social media seeing an event there. I mean, I don't know, if I have nothing to do on the weekends, I'll go to the events page on Facebook and see what's going on in Morgantown.
Mikayla: Yeah. So awesome. I agree. Okay. So, I know in your instance, you have been talking a lot more about like your career, so this question. I may have you think about it in a different perspective, because I just I know your family, so like I know you that you guys have like a beef farm, and things like that. So, kind of just explain how compatible social media is, or isn’t with your agricultural operation. So maybe like you as a producer. But then also you as a professional, too.

Rachel: So, I feel like. okay, how it's benefited. Right? Okay.

Mikayla: How it’s compatible.

Rachel: So, it's a little bit tricky, because like with what we do with cattle, it's not like we have show cattle, or things like that that we necessarily need to promote. Like I mean like we could, and I think that it would be beneficial. But my dad's just like not there yet. So, it's been like, little by little. Like getting a logo, putting up a sign, like things like that. So, where I've seen us use it most is social media on our agricultural operation is when my dad – my dad works closely with like our stockyards and has a very good relationship with them. So, if there's going to be like a board sale, or he knows that he's going to have like a load of cattle, he'll take videos or pictures of the cattle grazing or doing things, something like that for the stockyards to post on their Facebook page. So, while we don't have our own Facebook page I mean, like not to be. This is going to come across like very cocky and like arrogant, but it doesn't, where we've been around for 7 generations. If people, see like [OUR NAME] cattle. It's kind of like, you know. If you go to the State Fair, you see, you know, somebody set up the starts with a T, like you just know, like you, you just know. like that. They have, that they've been doing it. They know what they're doing so things like that. So, while we're not there yet, but that's not. That's not necessarily the market we're looking for either. If we were doing, you know, if we were selling our beef like that, we definitely would need that social media because that's a totally different target market. But the people that my dad's trying to sell, you know stockers to are in Pennsylvania, or Oklahoma, or wherever, and they probably call him direct – they do call him directly, or they're watching that that's stockyard sale. And it's more of like an annual thing like they know, you know, every year. But I definitely think that, like the stockyards has been very involved with like, and that's not just with my family, either. That's like a lot of the farms in our area.

Mikayla Hargis: No, that's a good point like if it's not in your market, then why would you, you know, kind of use it? and then kind of like on the flip side of things. I know we've talked about this a little bit like just kind of like the compatibility with your like current position.

Rachel: So, we see honestly like with, with the knowledge center, we see more on our social media, with consumers more so, than we do with producers. So, we want to aim towards producers, and that's like our main focus. But we tend to see that a lot of educators and
consumers are the ones that are picking up our infographics and things like that. So, we it's, It's kind of hard to get those producers because the producers and all. I mean the average age of our farmers like over the age of 55, I think, so those people are on social media as much. They're not, they're not using it. So, we try to focus a lot of our stuff for producers like through a blog and our newsletter, and made those like producer focus for them to be able to know where to find the information

Mikayla: Awesome. Thank you so much. Okay, so what are some, like so, what are social media platforms that you believe are easy to use? And you can just name a few, like in your personal opinion.

Rachel: Honestly, I think I don't. I mean, I think, that all of them are to use sometimes TikTok gets me. I don't really understand all of it. I get frustrated like with it, like when making content. Not necessarily, I mean, I’m not a content creator, by any means. But I tend to think Instagram is easy to use, but it's been – Instagram has been frustrating lately how they like totally reworked the way that content comes up and you see it. Facebook is just a trusty tool. I notice with Facebook, though, like there's no way I’m ever going to see everything that somebody put on Facebook. I have so many friends on Facebook. There's so much going on Facebook, but I think it's definitely I mean, like I know the Facebook is supposed to be, for, like old women or whatever, but like I, it's I like Facebook, but Twitter is probably my favorite. but I mean Twitter – Twitter is not necessarily, I don't think Twitter is a good business social media outlet, necessarily. I mean, a lot of people use it for business. But I honestly get like, I get a decent amount of my news from Twitter, and I probably shouldn't. But I follow like a lot of journalists, a lot of... I mean, that's where I get all my sports news, all my updates. I follow a lot. But journalists and people like that on Twitter.

Mikayla: Yeah. Twitter is good like, because it's like short and to the point and like, yeah, so you kind of said that TikTok could be a little bit more on the difficult side when it comes to creating content. Are there any other platforms that you think are a little bit more difficult, or anything that you want to add in.

Rachel: I don't think so. I use a lot of Pinterest, too. I'm not overly familiar with like how to post things on Pinterest. But our social media lady handles it, and our Pinterest seems to be pretty popular.

Mikayla: Okay, so you kind of touched on this a little bit. But what aspects of these platforms are easy to use. So, what about Facebook or Twitter or Instagram makes it easy for a user?

Rachel: I think favorite thing about Facebook is that when you hit the like little 3, I think it's like 3 lines, or whatever, everything is there. So, like if I want to see like my memories for that day, or I want to see the events, or I want to see whatever it's all in that. I like things that have tabs that are all under one singular tab, so it's easy to find, and easy
to see. When you post things like on Facebook, it is very straight to the point. What do you want to say? Where are you? What mood are you in? Who are you with? Like it's just it's easy to do that. And same goes for Instagram, pretty much. I mean, you know it has a place tag people, put location, put your filter whatever. Twitter is so straight to the point. All you're going to do is put 4 pictures and 200 characters or less. You know it's just it's, it's there. There's a lot more that you're working with TikTok, so I think, just like simplicity and like direction. I wish they had a birthdays tab. That's what I want on Facebook, though, whenever it goes like, you know, you know what I'm talking about? When it's like all those little things that it has. I need a birthday tab because they just sent notifications, and then I don't do it, and then I want to do it later, and then I scroll, and it's just yeah.

**Mikayla:** Okay. Yeah, that would be really beneficial. I know a lot of people who rely on social media, like Facebook for birthdays. Okay, so. and then what about, can you talk about maybe some aspects that are difficult to use for any platforms? So, I know you mentioned TikTok on the content creation.

**Rachel:** I just think that TikTok is like difficult because there's so many different aspects like you can put the voice things on there. But like there's things that I want to be able to do, that I just can't like, I want to be able to do like, make my own video or like, add that one. I don't know. I just think there's a lot going on, and it's just not... I just want to watch it and laugh. I can't. I can't do it. But I don't, I mean, I think that Facebook is so straightforward.

**Mikayla:** Yeah, I agree. Okay. So, what are some results that you have experienced from using social media? And these can be positive or negative.

**Rachel:** I think that one...I kind of think it's made people lazy, like back to the birthday thing. So, it's a new year, I'm trying to start fresh and be a better person. So, I went through and put everybody's birthdays in my calendar, so I could send birthday cards, because like in like – like addresses. My grandma has an address book, you know she just like gets the person’s name and goes. I don't have anybody's address saved. I have to ask my mom all the time, and I think that social media has made people really lazy, and the fact that, like we rely on Facebook to tell us when our best friend's birthday is. We rely on Facebook to tell us what is going on. And who is where and who's doing what? Who's got married? Who's got kids? And it's made us lazy, and the fact that we don't necessarily have that one-to-one contact with our like friends and family like we used to, especially with pictures. I mean growing up, we spent hours in the Walmart photo center printing out pictures so my mom could put them in photo albums. Now I don't have a single photo, but I mean like I have a couple. But you know what I mean like things like that. So, I think that it's made us like, not, it's made life a lot easier in a lot of ways, but it's taken away from that personal aspect. So, in terms of like positive things, I think. Well, you're not having that one-on-one contact like would I necessarily know if one of my friends from high school, got married and had kids without Facebook. Probably not. So, I
think it's a lot easier to be able to reach out to people and do things like that. It's just not as personal as I think it used to be.

And that goes hand in hand with marketing your business and things like that. Especially like I mean, I see my friend's number one driver, for the store has got to be Facebook. I mean the social media marketing that she has done there within, I mean she had...Let's see she got her job in – She started in January. They open the store in March. The only use social media like I mean, social media has been a huge driver for that business. And would that business be sustainable without social media? Probably not. So, I think it's huge, huge in marketing. Just to be able to push your product and show what you have. And I mean, especially like if, like I said earlier, if we were selling our beef and not selling, you know, I mean when we sell cattle we're selling double decker, tractor trailer loads, not one or two. Yeah. So, I mean, if we needed to sell like one or two calves, I'm sure that we would have a farm Facebook page, and we would be like posting that and showing what we're doing on a daily basis, but that's... I think definitely. marketing for businesses is a huge aspect.

Mikayla: Awesome. Okay, just a few more questions. Explain how you have personally seen social media being used in the agricultural industry.

Rachel: I think it's just, my favorite thing, I have a friend from Idaho that definitely, for agriculture advocacy, like I have a friend from Idaho. She was a state officer, the same that I was, and every Friday she is an “Ag Fact Friday,” and has, like the option on Instagram on an Instagram story to like to answer that question, and I think it's so easy to push agricultural literacy through social media platforms, and watch it evolve and be something great for like our industry, and then for consumers as well.

Mikayla: Okay, did you experience a “trial period” of using social media before deciding to adopt like this could be obviously like for personal reasons?

Rachel: I think, this is so funny, because I think there's a tweet that went around Twitter like a couple of years ago. That was like the stages of Twitter. “You download it. You think it's stupid. You're off of it for 3 months. You get back on. You love it” So, I think that Twitter is the only one that I ever had a trial period with, necessarily that I was like. I don't like this when I came back and liked it. Everything else I think especially like for my age, I mean I was twelve when I go to Facebook, and it was like begging your parents. Like I was in that age group, and I’m assuming you were too, where it wasn't new to us, like it was something you almost had to have. It was like, oh, everyone else has Facebook like I have to get one, too. I have to get an Instagram. I have to do this. So, I never had that trial period. I can see where other people, and I don't think that there will be people behind us trial periods. I mean, I guess, with TikTok. So, like I don't think people have trial periods with things like Facebook or Instagram, but I think if there are new apps that come out there's a lot of people that hated TikTok at first. They're like. This is stupid. Why would you download it. It's just like a trash Vine. So, I think, with new apps, you'll see that trial period, but with things like Facebook, unless it's an older
generation, like people our age and younger, I don't think... I think that's just going to be almost like a thing that you have and do.

Mikayla: Yeah. that's funny. I remember that tweet. Okay, so do you have any additional information pertaining to this research that you would like to add? So, this could be just like a spiel or a blurb that you think would be like important for me to touch based on, or to think about like while I’m doing my research.

Rachel: So, I don't know. I would like this to stay completely... like I mean like if there's a way you can put this in there. I don't know if you can do more research on it. I don't know how much I can share if I can share. But, like I’ll tell this to you, because I think it is valuable, We do [FARM INSTITUTE] one in West Virginia and one in Virginia. When we got our survey results back, 90% of the people that went to the Virginia Farm Management Institute, the reason they found out about it was through social media. On the flip side of that, 90% of the people that went to West Virginia, they heard about it through word of mouth. So, I think it's just something very interesting to consider that some places are way more advanced than others on social media usage. I think that will impact the results in what you what you find. I mean, that's something, like I don't know if that's just that they follow them, that people in West Virginia don't have it, that they just like that one-on-one connection better. Because we are, I mean, West Virginia people are very people oriented, I feel like. So, it might, that just might be how it is. It might be that generation that was there. But that was something that we did find that people in West Virginia are way more likely to attend events when they are asked by somebody rather than seeing on social media.

Mikayla: What were the ages of your audience at this institute?

Rachel: So, it can be anywhere. Like my dad went, my dad’s like in his fifties, but also, like high school teachers can bring their students like we have college students sometimes. So, it's kind of like a business plan, economic outlook like that kind of. It’s a large age range.

Mikayla: That’s interesting! Okay. I don't have anything else. Do you have any questions for me, specifically?

Rachel: I don't think so. I hope I was helpful.

Mikayla: Yeah! I enjoyed this. Thank you so much. This concludes our interview.
Savannah

Mikayla: Okay, so in the survey that you took at the West Virginia Farm Bureau Conference. You indicated that you use social media for both personal and professional use? Describe how you use social media for professional use.

Savannah: Okay, so, I use it a lot for work. I can talk about my specific jobs or like, do you want me to be saying it...

Mikayla: No, you can. Yeah, you can do specifics.

Savannah: Okay. So, with being in charge of the [agriculture commodity organization] media plays a really big impact on how we reach producers. So, I kind of use that if we have quick announcements or like we have our ground beef project that we're doing so like weekly updates on. What are the prices for ground beef that kind of thing, and just to keep an active presence? social media plays a big role in that, because, like we have things like quarterly newsletters, but the younger generations they're on social media.

Mikayla: Awesome. Okay, so you. Your response indicated that Facebook Instagram, YouTube, TikTok and an online blog would be useful to use as an agricultural producer based on your knowledge and experience. What are some advantages of using these platforms?

Savannah: I think it gets you kind of out of – it reaches a broader, broader audience. So, like. if you let's say, for example, pay for advertising on Facebook. Your neighbor might not normally see your Facebook post advertising your product, but if it's paid in there within the geolocation like, they would more than likely see it. So, I think it just kind of broadens your audience.

Mikayla: Yeah, and then, on the contrary, what are some barriers to using these platforms?

Savannah: I think people don't necessarily know how to use it, so they might not be utilizing it to it's supposed to extent and wondering why they're not having as much success on there. Which you know it's harder with older generations of farmers and trying to convince them that change is a good thing, and that it can help actually grow the business. But yeah, I think a lot of people number one don't know how to use it, or number 2, they don't know what's appropriate to go on there or not, that kind of thing.

Mikayla: Yeah, I can definitely see that. Okay. So, why do you believe it's important for agricultural producers to actively engage in social media?

Savannah: So, I guess one of the things that comes to mind is, if you're not telling your story who is? So, I think it gives us as farmers like an outlet to talk about, you know,
processing animals, and that, you know, being open and educational to people that might not understand what different words mean on their packaging. Like, for example, free range like that kind of thing. But yeah.

Mikayla: Yeah, awesome. Thank you. Okay, which resources, if any, have you used to help manage social media pages?

Savannah: So, I use Canva. I use that for a lot of my digital creation stuff. And resources... I’ll look at Pinterest. I’ll look at other local businesses, organizations, that kind of thing. See what they're doing. See what's successful. Trying to think here. I use like the Facebook Meta Planner. the schedule posts on like Facebook and Instagram.

Mikayla: Awesome. So, do you think that these resources have positively impacted your opinion on using social media like for your work?

Savannah: Oh, yeah, oh, yeah.

Mikayla: How so?

Savannah: I think, for example, like using the scheduling tools. Like I, you know, posted on Christmas Day. Obviously, I don't want to love on my phone and work and like push on Christmas Day so like that kind of helps create this like “oh, I don't have to think about it. It's already there. Set up ready to go.” And I can kind of plan out what we're going to post for the month ahead of time. And then with Canva, I like it because I feel like it makes our stuff look more professional. Just pictures look nice. They're aesthetically pleasing. They have our branding on them. So, people., you know, recognize immediately what farm or what organization the post comes from.

Mikayla: Okay, do you think social media training would encourage more individuals to adopt social media into their operations?

Savannah: I think that it would overall. I think it'd be hard to get people to come to trainings. I think that would be one of the largest barriers, but I think once they have the information laid out in front of them, and kind of like some basic knowledge they might really contemplate that, you know it is worth it, and it is a good resource that you can do pretty well at a low cost. So, I think I think it would be good, I guess I think it would just be a challenge getting people to sign up.

Mikayla: Yeah. so, what type of trainings do you think would be more beneficial? Like anything that comes to mind so like the environment, the content on that kind of thing.

Savannah: So, like for social media?

Mikayla: Yeah
**Savannah:** So, like what kind of content.

**Mikayla:** Or what kind of like training like, do you think would be beneficial? So, whether that's on like using content creation, or like online, in person, things like that held by certain organizations.

**Savannah:** Yeah. So, one session I actually got to sit through that Farm Credit did for young farmers with Virginia and West Virginia, and they talked about verbiage and what to post on social media and that kind of thing. Which I found really interesting that, like a lot of people call their farms like hobby farms. And they want to like and explain the verbiage of why you think it's just a hobby when, like it's clearly something that you get money from. And like you, you put in a lot of time more than somebody would with just a hobby. So, like, I think, putting things that might explain verbiage. I think just how to classes would probably be good. Like, I said one of the most useful tools is being able to schedule my post ahead of time. And a lot of people don't know how to do that. I won't. I won't name names, but I recently had to teach someone how to use a hashtag, and how to tag people on Facebook for their business. So, like it's really amazing things that you and I might think are like super basic concepts. Some people just don't know how to do.

**Mikayla:** Yeah, absolutely. All right. So, this is kind of you jumped the gun a little which is awesome. But yeah, no, that's okay. So, describe a time where you shared your experience in using social media with a fellow ag producer.

**Savannah:** Yeah, I had to show someone how to tag people on Facebook. At first, I was like, “oh wow, okay.” Which I mean now he knows. So, like now that's that solved. But like it's amazing, you know, how people don't know how Facebook works. My mom, for example, she's a little kooky, and, like she'll share a post on Facebook, but she won't realize that she shared post on Facebook. So, like I see it a lot of times where it's the basic things that we might think are basic, but a lot of people don't quite understand.

**Mikayla:** Yeah. Okay. So, what advantages do you believe social media has over print or traditional media?

**Savannah:** It's cheaper. It's faster. I don't have to wait for printers. I don't have to pay for printing. I’m just starting to get into doing like digital newsletters for the [ORGANIZATION] compared to like their – they will, they will still be printed. But like, if people want to opt into having them digitally, they can, because sending over 400 newspaper copies is a lot more expensive than sending out a free email to everybody in the membership. I think.

**Mikayla:** Absolutely. Okay. So, this next question you can answer it like from the perspective as like a producer or in your workplace, whatever you think like comes more
naturally. But explain how compatible social media is or isn't with your agricultural operation?

**Savannah:** I mean, I think social media is always compatible with what you do. I’m trying to think. Sorry, that's a tough question. That's a good question though. And I think it's just important to make it a priority. Like I said earlier, like if you're not sharing your story and talking about what's going on your farm, like people they wonder. And I think you know educating people, whether it be recipes on how to utilize your product, or if you do that kind of thing, or like raising animals, how to. There's a lot of questions about like animal ethics and whatnot that the public has. So, I think, making it a priority and making it work in your practice, and very important, because, like I said, if they don't understand what's going on, or if they don't know how to implement what you're selling or like anything like that. Then you need to be educating them and showing them and sharing that.

**Mikayla:** Yeah, absolutely. Okay. So which social media platforms do you believe that are easy to use?

**Savannah:** Just like their basics, I think, Facebook. I think people kind of get it. Like I said you'd be surprised how many basics that people don't know, but like they kind of get the gist to post. Instagram I also feel like is easier just to use. Like algorithms, we won't get into that because I feel like that's not day-to-day, farmer, type stuff, but like just that kind of thing. Facebook, Instagram. And then I think things like TikTok are kind of hard to make videos on. I struggle at making TikTok videos, so like I can't imagine my 60-year-old mother trying to make a TikTok about farming. And then like sometimes I always like to think to like which platforms are actually practical to use. So, like Twitter. Would it bring anything, maybe, but probably not to, you know, to a day-to-day farm operation. Like maybe, if you have a good platform, but like if you're not posting on it more than twice a week like it’s not worth it.

**Mikayla:** Right? Yeah. Agreed. Okay. So, what aspects of these platforms are easy to use? So, this can be like out of any of them that you listed.

**Savannah:** Okay. So, like what Facebook. I feel like it is pretty straightforward, even though I know, I said, like some people struggle with the basics. But like, you can add a picture you can type out a couple of sentences and share it with. I think that's pretty basic to use. I think figuring out what people like to see and the professionalism of it, like your page looking nice, comes with time and figuring things out. But I feel like that's pretty easy. And then Instagram same thing, but also like with them being connected, you could just check a box, and they'll go on your Instagram and Facebook. You can do it all in one. So, I think that's pretty easy. Like I said, Twitter is easy, but I don't think it's very worth it. And TikTok, it can be cool. You can reach a lot of people, but it's hard to like to get all your like sounds to sync up and upload all your videos and it would be like a nightmare for someone who’s just starting out. So, did that answer your question?
Mikayla: Yeah, yeah. And then I just added, TikTok for the difficult to use. Is there anything else that you think that you'd like to add, for aspects that are more difficult to use with any of the platforms other than TikTok?

Savannah: I'm trying to think. What else is there. I know there's like LinkedIn, which I’m not very good at LinkedIn. I'll admit I never know what to post on it or like, because I feel like it’s so business oriented. And there's things like I definitely share. But it's like, is it worth it for me to post on there regularly? Probably not. I can't think of any other social media platforms for like that.

Mikayla: That's okay. Yeah, that was great. Okay, so what are some results that you have experienced from using social media? And then these can be either positive or negative.

Savannah: Yeah. So, I think sometimes it's like a roller coaster of who sees your posts and who doesn’t. Like, sometimes I’ll post things on, for example, for the Cattleman’s page, and it'll get ten views, which not really great, considering how large the organization is. And sometimes I’ll post, and we'll get like 10,000 views. So, it's sometimes just discouraging to be like nobody saw it. But then again, every once in a while, you'll have something that will really pick up, and people will see.

Mikayla: Yeah, I see that, too, like running a social media page and like looking at the analytics and stuff, and the engagements. It really gives you a different perspective of like how social media works.

Savannah: Oh, yeah.

Mikayla: Okay, explain how you have personally seen social media being used in the agricultural industry.

Savannah: So, I feel like I’m definitely seeing it more. I follow some Instagram accounts like Wandering Maverick Boutique, and they post like things all the time. And so, I, I definitely feel like I’m seeing more ag things. But I’m wondering also if it's just because I follow ag things too, that like makes it more prevalent. It might be, but I do think farmers are kind of understanding that, hey? You might be able to get more people to come to your sale if you post about it on your Facebook, rather than tell your 15 friends at the stock barn. So, you know, like I think, I think farmers are kind of understanding that it's definitely a tool that's easy to learn how to use once you get there, and easy to like, reach more people. I feel like I've repeated myself a lot that that's okay.

Mikayla: No, no! You’re fine. So okay, I just have a few more questions. So, did you experience a trial period of using social media before deciding to adopt?
**Savannah:** I guess, I guess I can like, put it in perspective of like my personal TikTok. Like, it took me several months to decide that I would try to post one, and it was super cringy and awful. And I deleted it like a month later. But I think I have like three on there now, which is not a lot, and I've been on TikTok since pre-COVID, which is embarrassing. But yeah, like, TikTok took me a while to get into. And I think I've done it like, Instagram, back when Instagram came out. I was in high school, I think high school or middle school, and all my friends got it, and I was like, “I think this is going to be a phase that passes,” and after a couple of months. Like oh, people are actually using it. I guess I’ll get one, and I did the same thing with Snapchat honestly, not that Snapchat is... but that I kind of waited to see if it actually would take off or not.

**Mikayla:** Yeah. Did you have any like specific feelings like when you finally decided to try it out, or anything like that? Like what was kind of going through your head? I know like for TikTok; you mentioned like you felt a little uncomfortable posting at first.

**Savannah:** Yeah, it's like the awkward line of like, is this cringy? Or is this funny? I'm just an awkward person in general, anyway. So, I’m like, I don't know if anybody would have any sense of humor. It was like a TikTok with my dog.

**Mikayla:** Oh, yeah!

**Savannah:** But yeah, like TikTok, I definitely think it’s harder. And this year like my New Year's thing is like I want to be more present on social media and like share more about what I'm doing and things, but like it definitely, it's uncomfortable to try new things for everybody. I think so just kind of got to just do it and learn from your mistakes, like cringey TikToks.

**Mikayla:** Yeah, absolutely. Do you have any additional information pertaining to this research that you would like to add? So, this could be like a spiel or something that you've learned in your process, or just anything that you think would be beneficial.

**Savannah:** I’m trying not to like to reiterate like the same 5 things over and over, because I think it's just important to just do it. Like, look at research, what other people are doing that maybe you could do. Like I said, recipes. That’s something super easy, like if you sell, let's say, ground beef. Why don't you share some recipes for ground beef? Like you don't have to be super just everything out in the public, but you can definitely talk about your farm, what your animal names are and keep things like not everything has to be super serious. So, I think social media is definitely a tool, but I think it's something you can have fun with, too. So just make sure you know isn't like showing something ridiculous that you like question if people should see or not.

**Mikayla:** Absolutely. Okay. and do you have any questions for me?

**Savannah:** No, I don’t! Thank you!
Mikayla: Thank you for participating. This was very valuable!
William Mikayla: First things first, so, in the survey that you took at the West Virginia for Bureau Conference, you indicated that you use social media for both personal and professional use. Describe how you utilize social media for professional use.

William: We actually use it quite a bit for communicating with students. And maybe more importantly communicating with parents and grandparents, because we put a lot of things out that we do through the FFA Facebook, and I know sometimes that’s not always in accordance with school policies. But I’ve heard more… I’ve probably been reprimanded more from parents, and especially grandparents when we don’t do it than I ever have been from the school system. And, you know, our school also maintains a Facebook page. We have one of the as the FFA chapter, but a lot of times I… personal Facebook Page, and I just always kind of have the motto of you know I don't put anything out there that I wouldn't want grandma to see, and I’m open book so I just think it’s a good tool for us to use as ag teachers to talk about what we do, and it’s, it's instant and convenient, and you know we can, we can do it immediately when the event happens. So, it’s a good tool.

Mikayla: Absolutely, and I’m not sure what all you – you all like, have a farm and do some production there, right?

William: Yes.

Mikayla: And do you use any social media for those purposes? Or in that instance, or just kind of as the Ag Teacher?

William: Yeah, I’m more you know, I’m on a couple of dairy farmer sites that I see daily, with whether it's used equipment or just ideas that they have to be more productive, but we don’t use it to promote our farm or we're selling our commodities, milk. We really don't have much control over you know, where it goes, what happens to it. So, what we do like here share things that our kids do. Yeah, and just things that are going on as far as especially, my wife shares a lot of hay making pictures and just kind of yeah, we don't hang out feed store anymore to gossip, to tell the farm story. So, I guess we do it through social media, and we just have to go along with it.

Mikayla: Yes, absolutely! Okay, so your response indicated that Facebook, Instagram Twitter, YouTube, TikTok, and an online blog would be useful to use as an agricultural producer based on your knowledge and experiences. what are some advantages of using these platforms?

William: Well, I can't really respond to that very well, because I’m not, you know, kids know more than I do. They’re valuable because I hear others say, “I saw this or that from this platform,” and I’m willing to learn more. My kids keep telling everyone to set me up
with the you know, on a snap or Instagram. I don't know which. They think it would be cool if I had something like that. But so far, I've not done it. so yeah, I’m not very much help to you on these platforms other than I think they are, it can be a good tool.

Mikayla: Absolutely. No, that's a that's good help there. You recognize that. There could be advantages there.

William: Us old folks use Facebook anyhow.

Mikayla: Yeah. So, kind of on the flip side of things, what are some barriers to using these platforms?

William: Well, probably the biggest barrier would be, you know my knowledge of the platforms and how to use them. And I guess the access to negative things that can go on there would be and another barrier for me not wanting to maybe use it as much. But yeah, my, my knowledge of social media probably be the big one.

Mikayla: Awesome. Next question. So why do you believe it is important for agricultural producers to actively engage in social media?

William: Well, that's kind of the chosen form of communication, especially if we want to keep our young folks in what we're doing and encourage them to be a part of it, we're going to have to use these platforms because they don't read newspapers seldom watch the TV news. So yeah, we got to get with it and then be where they are

Mikayla: Thank you. Alright. Okay. Sorry about that. so next question which resources, if any have you use to help you manage social media pages, or have you used any?

William: I can't really say that I’ve used any.

Mikayla: Okay. All right. And then sorry. Some of these questions I have that are like built in, like, if you answer one way. Okay. So do you think that social media training or more resources would encourage more individuals to adopt social media into their operations.

William: I do. Yes, and anytime we go to conferences, whether it's for our dairy farm, or for professional development or teacher conferences. I try to participate in those or at National FFA Convention. They do some things; they give you ideas on how to use that. But yeah, absolutely. Especially for my generation we need to be more part of that, know how to do more things with it.

Mikayla: So more specifically, if you had, since you have kind of been into some of these trainings. What type of trainings, do you think would be more beneficial for West Virginia agricultural producers?
William: Because we have so many niche, and small farming opportunities across the state, it's a great way to advertise what we do and tell a story. So yeah, I think just more education what those posts should look like, or just setting up a web page. You know what should be there, how to track your audience; those kinds of things that you probably should learn more about.

Mikayla: Okay. So, describe a time where you shared your experience in using social media with a fellow agricultural producer, or maybe where someone shared theirs with you.

William: Well [AG TEACHER] and I do a lot back and forth, and our and our wives do, because we have a lot of similar interest in the classroom, our classroom activities, as well as they have the agri-tourism, and we've dabbled in that, too. So yeah, just the sharing back and forth of what works and what doesn't, for our 2 families, and then our kids because of the same age. We love, you know, bragging on our kids, or making sure that they know what each other is doing, because they also, you are part of more so social media what we even are. So, they become good friends through that

Mikayla: Awesome. Okay, so what advantages do you believe social media has over print or traditional media?

William: The accessibility and it's so current. I mean, it's almost real time. Folks – just that's something you can access, you know, if you have 10 minutes in your car waiting for somebody or you're anywhere with a little downtime. You can pull the phone and pull up that media versus you know, of course, your printed materials. So, they just don't get recognized much anymore, and the fact that you can respond makes it that much beneficial as well.

Mikayla: Awesome. Thank you. Alright, so explain how compatible social media is, or isn't with your agricultural operation, and kind of your professional occupation as well.

William: In some cases, not compatible at all with our farming operation, because, you know, my wife and I both work off the farm. So, our time getting chores done is pretty limited. But we both like to see what's going on, and we're guilty of spending too much time on our social media when we should be doing work. Of course, you know, with young folks, I'm always telling my daughter and sons put the phones down to till we get chores done. So sometimes milking takes a little longer, calf feeding takes a little longer because it's interrupted with the social media, but on the same note it's nice when you can, you know, post a picture of the new calf that you know somebody is interested in buying, or you've got something broke on the farm, and he's hey, what do I need to do here, and you get suggestions for maybe a repair or just – the communication’s invaluable. You just have kind of an encyclopedia at your fingertips for help.
Mikayla: Awesome. Okay, so we kind of touched on this a little bit, but what are some social media platforms that you believe to be easy to use?

William: Now, Facebook is easy. That's one I'm most familiar with. Of course, you and then, we, on the farm we use you know all the shopping websites, for you know, just like ordering parts. Of course, Amazon's popular. It's nice to be able to have instant access to the equipment part numbers, and you know I can order a part from the hay field, if need be. So yeah, that's just great to have that.

Mikayla: Okay. And then, on the contrary, what are some that you believe are more difficult to use?

William: I'm not familiar at all with Snapchat or Instagram. Twitter, I have a little experience with that. But yeah, I don't. I don't quite understand Snapchat because all I see is kids making weird faces. I'm not sure why that has to be that way. But so, I guess those two would be probably the most difficult, just because I don't understand them.

Mikayla: Okay, so I know you said Facebook is easy. So, what aspects of Facebook do you believe are easy? What makes it easy to use?

William: You know daily, you just have, you know, posts from your regular friends, and it just rolls through there. And I do think however their system works that you do get blocked out of those, because it seems like your friends groups get smaller as time goes by, so occasionally you have to do that resetting them. I've done it, but I can't tell you how to do it right now. That's the one thing I don't like it. I don't like the fact that you know the world can kind of track you and monitor your habits. You're buying trends, probably we put more out – the more know about us out there, maybe more than we would ever suspect or want, but that's just kind of, I guess the price we pay for being in the know.

Mikayla: Absolutely. Okay, and then, so, what are some results that you have experienced from using social media? And these can be positive and/or negative.

William: I guess the most positive thing is all the great comments that I get back from parents, relatives, grandparents. When we're doing FFA things, you know. Of course, when we do trips, we try to post pictures of things the kids have done, and it just yeah, you get all these likes, and you may get 100 comments. And so, you really get the feeling that as a teacher, what you're doing is being appreciated, and it helps to motivate you to want to do more of that and share more of your program. And so yeah, that's a good back and forth positive influence there. Can't really say I've had any too many negatives. You know any of us in the teaching business, there's always going to be naysayers out there that kind of you know, lash out, maybe at the whole school, and they'll lump all teachers, you know, of doing a poor job when that's not the case. But you know that's
happened in other forms of media forever. So, it's just rather no taking a week to appear in the newspaper, it happens. My social media experience has been good for the most part.

Mikayla: Okay. so, explain how you have personally seen social media being used in the agricultural industry.

William: You know, early on there was a lot of people did blogs, and with the dairy industry I always enjoyed the ones that had the dairy farmer challenges, and people had their personal stories of, especially when we're going through the really hard times back 10-15 years ago. But since then, it's just you think you thought something through, and you happen to, you know, maybe post a question, or just read through comments on a certain page that you may be on. And you’re like why didn’t I think of that? So, one that I belong to is “Dairy Farmers Milking Under 250 Cows.” And there's always, you know, there's neat things that people have done that are cost effective ways of handling the challenges that maybe I didn't think of so. Of course, the teachers, the teacher pages are great, too, because there's so much sharing because I can pick up a lot of it. you know almost several days.

Mikayla: Awesome, okay. So, did you experience maybe a trial period of using social media before deciding to adopt?

William: Oh, yeah, I was a very slow adopter.

Mikayla: Okay, what, what were kind of your experiences during like this, this trial period or deciding to adopt social media?

William: Just probably being the reluctance to put things out there, because, you know, we've all been probably scared to death that at teachers’ meetings that things will be used against you or you'll put a picture of a student on there, and a parent will be unhappy at the fact you didn't have permission to print that picture. I was. You know I was a late adopter because I probably didn't have a smartphone until you know, 5 years ago. I was steadfast on my flip phone. It was full proof. I couldn't damage it. I couldn't break the screen on it like the smart thing. But then, once I started using it like, how the world did I ever get by without this? So, yeah, and even Facebook. I just – and I still have friends that are my age that they won't even send a text just because they're concerned that you know, their information is out there. They just don't want any link to the outside world it could be somebody could come after them. But I’ve kind of gotten through that. And it is what it is. I guess you call that bridge if it happens to you, but still try to be, you know, fairly responsible and safe with it. Don’t put a card number or social security numbers out there too much.
Mikayla: Yep. Okay, so we are pretty much at the end, but if do you have any additional information pertaining to this research or topic that you would like to add. So maybe like a story or your experience, more experiences using social media or anything like that.

William: Well, recently I had two students that have started a podcast. So, it's nice, you know, driving my son back to the airport the other day I was able to pull one of the podcasts up when I didn't have a good radio reception, and enjoy that going to the airport. And of course, social media is a way we can promote – promote them, and that caught on real well, and they telling the Ag story, so that's been a success story so far. Give them a little plug, [NAME OF PODCAST] and it's on Spotify and Apple Play, but they've, I think they just interviewed Caroline just recently. I think they just edited and posted that one here in the last few days.

Mikayla: Awesome.

William: I haven’t gotten to hear that one.

Mikayla: I will have to check that out. That is really cool.

William: The episode before that was real good. I think they just posted their fourth episode.

Mikayla: Is this their SAE, or are they just doing it for fun?

William: No, it's their SAE. Yeah, some challenges of how do we put that in the record book? You make a lot of journal entries. We're not to the point where we have paid sponsors yet. That's kind of the goal. But the yeah, the two gals that are doing it, they seem to have that natural knack and voice, and kind of that naiveness that makes it interesting because they ask the questions that you probably the general public would want to know. So pretty proud of them.

Mikayla: That’s awesome! I will have to check that out. Yeah, if they have any people that they need to interview, send them our way at the University. I would love to like, put them in contact with some people.

William: Great! I think they have Elizabeth Lynch; they have her scheduled to do one here pretty soon.

Mikayla: Oh great. How awesome! Well, that is all. I think that ended on a great note. Do you have any questions for me specifically?

William: No, I admire it. This is a great topic that you're doing. This is information that's going to be valuable. You know you got to have something good for thesis, but I think it's you know, usable beyond that.
Mikayla: Absolutely. Yeah, yeah. When picking a topic, I wanted to pick something that was, you know, relevant, and not a lot of research out there on it. So especially like in our state, like there’s research everywhere else, but they don’t really like – it just talks about the positives, and it’s not talking about like why people are adopting, which is like you said. All right. Well, that went by super quick. But I really appreciate it, and everything you said I was super valuable, so I really appreciate it a lot, William. Thank you so much, and I’m sure we will see you here soon
Cassandra

Mikayla: But okay, first things first in the survey that you took at the Farm Bureau Conference indicated that you use social media for both personal and professional use. Describe how you use social media for professional use.

Cassandra: So, for professional use we just use it for our business. [FARM NAME]. We use it to basically just post like our hours, keep our audience involved, any new and exciting events that we have going on so stuff like that.

Mikayla: Awesome. Okay. So, your response indicated that Facebook, Instagram, Twitter, YouTube and TikTok would be useful to use as an agricultural producer based on your knowledge and experience, what are some advantages of these platforms?

Cassandra: It just allows you to interact with a greater audience. We have customers throughout the State now versus just here in [COUNTY] alone.

Mikayla: Okay, and then, have you – What are some barriers to using those platforms?

Cassandra: Probably just the time, and you can become easily sucked into the social media platform. I get on there for literally 2 minutes, and I’m on there for 10. So

Mikayla: Absolutely. I find myself doing that, too. Why do you believe it's important for ag producers to actively engage in social media?

Cassandra: Just because it can tell your story, and like I mentioned earlier, you can gain a greater audience through that.

Mikayla: Okay. So which resources, if any, have you used to help manage your social media pages?

Cassandra: I don’t know if I really have, I mean, we just kind of have done our own thing and have seen what's worked and what our customers want, and just kind of played with it.

Mikayla: Awesome. Okay. So, do you think that a social media training would encourage more individuals to adopt social media into their operations?

Cassandra: Yes and no. I think it really just depends, like the older generation – Well, I don't want to say older, but like my dad. My dad is not going to go to a training and learn how to use Facebook and I don’t know. I mean most farmers out there, they’re so busy they’re not going to take time to do it. But I feel like the younger people like my age, and
I don't know, even in their thirties, they would be more apt to do it, if anything, if it could be done online.

**Mikayla:** Awesome. Okay. So, can you describe a time where you shared your experience in using social media with another agricultural producer?

**Cassandra:** Hmm. I'm trying to think. Can you repeat the question?

**Mikayla:** Yeah. So just describe a time where you shared your experiences with using social media for your business with a fellow Ag producer, and it doesn't necessarily have to be an Ag producer. Maybe someone who's like interested in using social media or for business purposes, or things like that.

**Cassandra:** Probably when we were networking with the Virginia Farm Bureau Young Farmers. We had like a round table, and we were just sharing our Facebook page, and some of the, like the buttons like the “message me” buttons, she didn't know that she could do that, so I don't know if that's sufficient for your...

**Mikayla:** Yeah, no, that's good. Cause like you're interacting with another state. So that's really awesome. Do you have a time like where someone talked to you about their experiences that you would like to explain upon?

**Cassandra:** We were probably working with Farm Credit a few weeks ago, and my husband’s on the [COMMITTEE] and they were pulling up their cell phone, and she was able to tell us at what time she had this many views on Facebook, or throughout the month she had this many likes or something, and I didn't realize that you can necessarily do that. Like look at your stats throughout the month. So that's something that we learned.

**Mikayla:** Awesome: yeah, the engagements are really cool to watch and see.

**Cassandra:** Yeah, maybe that’s what it was.

**Mikayla:** Yeah, yeah. Okay, so what advantages do you – do you believe that social media has over print or traditional media?

**Cassandra:** For us I mean, we've just been able to gain a broader audience through social media. One good story is we were – whenever we first started selling meat, we were featured in a local newspaper, and some guy from Charleston, Google local meat producers, and he found us. So now it's a regular customer. He comes like once a month all the way from Charleston, just to purchase our meat, and it's because of social media. I mean no other way would he have ever learned about us.

**Mikayla:** Okay, so explain how social media is or isn't compatible with your operation.
Cassandra: I guess it is for the most part. The hardest part for us is, we don't have cell phone service here, so the only time I’m really able to post stuff is when I’m inside, and we really can't go live like at the barns or anything. Yeah, I can take videos, and then come back to the house and post it. But it takes two hours to post a video or something. So that's a downfall for us, but if we were in cell phone service and had access to that, I do think it would be really beneficial.

Mikayla: Okay. So, what are some social media platforms that you believe are easy to use?

Cassandra: I know I mentioned Facebook a lot. That's our primary thing. We have one on Instagram, but, like I said, we just did that a week ago. So, we're still learning the ins and outs of that, and we do have a website. But honestly, I don't know much about it. We just kind of have. We're paying a girl to do that for us, and she'll kind of post updates for us. But, like, I said really don't do that.

Mikayla: So maybe on the flip side of things, if you've dabbled in any other platforms, which ones, do you believe are more difficult to use?

Cassandra: For me I just think that Instagram is like easy to follow whether I’m on my phone or my computer. And it says like “post here” or “add a photo” or stuff like that. So, I've just thought that Facebook is easier, and even switching back and forth between our pages, from our personal page to the farm page, to the corn maze page, that's just easy to navigate for me.

Mikayla: Okay, and then is there a specific aspect of some of those platforms that are easier to use than others? So, for example, like when it comes to posting or the way the applications are set up and things like that.

Cassandra: For me I just think that Facebook is like easy to follow whether I’m on my phone or my computer. And it says like “post here” or “add a photo” or stuff like that. So, I've just thought that Facebook is easier, and even switching back and forth between our pages, from our personal page to the farm page, to the corn maze page, that's just easy to navigate for me.

Mikayla: Awesome. and then which – what are some aspects that you believe are more difficult to use? I know you mentioned Instagram you're trying to navigate, so maybe what on there has been kind of confusing or more difficult for you?

Cassandra: Just figuring out where to post, to begin with, and then notifications like “this person is following you” or do you want to follow them back, or something like that. So that's just one experience.
Mikayla: Yeah, I have not liked the “this person is following you follow them back”, or something like that. It's just very confusing and like messes with all of your notifications, I think.

Cassandra: Yeah.

Mikayla: Okay. So, what are some results that you have experienced from using social media. I know you kind of touched, based on that a little earlier with that story, but these can be both positive and/or negative.

Cassandra: Well, one negative is if someone leads the comments, and you don't catch it in time to like delete it, or hide it, other people can see it. So, like one person bashed us because we are not solely grass-fed beef. We're grass-fed and grain finished. So, she just thought that was the most awful thing ever, and she left a pretty nasty comment on there saying that we are killing the environment, and we're killing the people and blah blah blah! So other than that, I think that was really our only negative experience. Definitely positive is we can post events and people can share it. We can also offer prizes, like I share our page and you can win a prize or something like that.

Other person in background: *inaudible*

Cassandra: Okay, okay, we’ll get something.

Other person in background: “well tell me...”

Cassandra: Mommy’s on the phone right now. Okay.

Other person in the background: So how long...

Cassandra: In just 5 minutes Okay. Sorry. We're playing pets store.

Mikayla: That's okay.

Cassandra: And then what was the question again?

Mikayla: Positive...You were saying that you can post events. People can share. You offer prizes for like sharing your page and things like that.

Cassandra: Oh, yeah. And then I guess, like, there's different groups that you can post on that you can like highlight stuff. So that's really work for us. Like if we had, I don't know a group of 25 ewe lambs to sell we can post to like a West Virginia sheep producers page, and more than likely we can sell them on there.
Mikayla: Awesome. Okay, we are almost finished. So just a few more. Explain how you have personally seen social media being used in the agricultural industry.

Cassandra: I follow a lot of farm bureau pages, and just a really good example is the Virginia Farm Bureau page. They are currently in Puerto Rico, so they can go live and give us a glimpse as to what is currently taking place, and also their competitions, the people who made it to like the final round they are constantly updating. So, we can see who's winning or anything like that.

Mikayla: Awesome. Did you experience a trial period of using social media before deciding to adopt?

Cassandra: Not really. I mean, I guess I got Facebook, Maybe whenever I was in college, so I had experience for that. And then here in the past I don't know three years like I've created one for the farm, and we just kind of became more active through that and update, well we attempt to update more regularly, but sometimes that doesn't always happen. So.

Mikayla: Yeah. So, when you started to use social media more for your farm, what were some of your feelings during that period when you were just getting started from like switching to personal to business?

Cassandra: It was kind of nerve racking because you didn't really know what to post. You didn't want to post too much information because I mean, there are crazy people out there, and you don't want them showing up to your farm. And then, I mean, what do you post? There's like a certain line, I mean, do I want to post a picture of a ewe lambing or will people on that offensive and report me, or something like that?

Mikayla: Awesome. Yeah. Okay. So do you have any additional information pertaining to this research specifically that you would like to add? Maybe like another story, or just your overall experiences, and maybe where you get want to go in the future.

Cassandra: In conclusion, I feel like social media has been a huge help for us, especially where we don't have cell phone service, and just by posting on Facebook like once or twice a week like, say, we still been able to stay in contact with our customers, and let them know if we have like a new shipment of meat, or we'll be at the farmers market this week, so come out and see us. And if it wasn't for social media, I wouldn't be able to do that. I don't have time to make regular phone calls, and I mean I could send out a mass email, but some people don't check their email regularly. So, social media is just a quick way for me to create something like on Canva. That's catchy, eye appealing. I can post it, and then I'm done.

Mikayla: I also love Canva. It's so easy, and it's so awesome to work with.
Cassandra: It is! Before, I had to work with like a graphic designer, a lot for the corn maze and I had to pay for it. But now there's all sorts of stuff that I feel was professional looking, and I'm like heck, I can do this.

Mikayla: Yeah. And you just like, take the template and kind of make it your own, and it's really fun. I'll catch myself like being on there for like an hour. And I’m like, okay... Do you have any more questions for me specifically?

Cassandra: I don’t think so.

Mikayla: All right. Well, that's it. Thank you so much, Cassandra. I really appreciate it. This has been a really invaluable experience for me, and I’m excited to post this and get this published here soon and defend my thesis. So, I really really appreciate you taking the time to do this. I know you guys are really busy, so.

Cassandra: Oh, it's fine, but I mean I’m sure that you have, but feel free to go check out our Facebook pages like, say, here the past few weeks I've been slacking posting stuff, but feel free to use anything, or take a screenshot of it or offer any opinions or things like that.

Mikayla: Absolutely! Awesome. Well, thank you so much, and I hope you have a great rest of your day.

Cassandra: All right. You, too, thanks.

Mikayla: Bye.

Cassandra: Bye.
Appendix F. IRB Letter
Flex Model Approval

To: Haley Rosson
From: WVU Office of Human Research Protections

Protocol Type: NHSR / Flex  Approval Date: 10/18/2022
Submission Type: Initial  Expiration Date: 10/17/2027
Funding: N/A

WVU Protocol #: 2210659366
Protocol Title: Examining the use of Social Media by West Virginia Agricultural Producers

The West Virginia University Institutional Review Board has determined that your submission of protocol 2210659366 qualifies for approval under the WVU Flexibility Review Model.

- **FLEX**: The review of the above referenced protocol was conducted in accordance with the ethical principles of the Belmont Report. The protocol meets the criteria for approval Flex Model Review because the project does not have federal funding, is considered to be minimal risk, and falls within the guidelines of the WVU Flex Model as of this approval date.

The following documents were reviewed and approved for use as part of this submission. Only the documents listed below may be used in the research. Please access and print the files in the Notes & Attachments section of your approved protocol.

- Form-25 Cover Letter MHarigis.docx.pdf
- Data Protection Certificate - Haley Rosson.pdf
- ReseachGuides - MHarigis.pdf
- SocialMediaQuestionnaire.pdf
- SpecificMinorRevisionsLetter.pdf

**WVU IRB approval of protocol 2210659366 will expire on 10/17/2027.**

Protocol #: 2210659366  Phone: 304-293-7073
FWA: 00065078  Fax: 304-293-3098
1. There is no continuing review option for Flex protocols. If this protocol is still active after five (5) years and you intend to continue, you will need to resubmit a new protocol for approval no less than three (3) weeks prior to the expiration date in order to ensure uninterrupted study continuation.

2. Amendments are not accepted on Flex protocols and are not required as long as there is no increase in risk to participants and changes do not exclude the study from Flex inclusion criteria.

3. The IRB must be notified if there is an increase in risk to participants or if federal funding is awarded to conduct research under this protocol. In any of these cases, this protocol must be resubmitted as a new submission in WVU+kc.

4. Unanticipated serious adverse events and/or side effect(s) encountered at WVU or an affiliate site that are related to the research must be reported to the WVU IRB within five (5) days using the Notify IRB action in WVU+kc.

5. Any Unanticipated Problem or UPIRTSO or other research related event resulting in new or increased risk of harm to study subjects, occurring at WVU or an affiliate site, must be reported to the WVU IRB within five (5) days using the Notify IRB action in WVU+kc.

6. All research personnel performing tasks related to the research must complete and remain current for the required training as applicable to the protocol referenced above.

7. Only Flex Consent Forms with the WVU+kc watermark may be used to consent participants.

The WVU Office of Human Research Protections will be glad to provide assistance to you throughout the research process. Please feel free to contact us by phone at 304.293.7073 or by email at IRB@mail.wvu.edu.

Sincerely,

Joseph Malcolm
Program Coordinator