

Changes in the uses and gratifications of virtual communications for Kansas State Research and
Extension agents during the COVID-19 pandemic

by

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Abstract

In late 2019, an unknown version of pneumonia was reported in Wuhan, Hubei Province, China. This version of pneumonia was later named COVID-19, and on March 21, 2020, the World Health organization declared COVID-19 a pandemic. The pandemic has affected life for people globally due to mask wearing, social distancing, lockdown, and work-from-home orders. To slow the spread of the virus, many people had to adjust to working from home, resulting in changes to their use of virtual communications for work and social interaction. Uses and gratifications theory, a theory developed by Katz and Blumler in the early 1940s, states that audiences are active rather than passive consumers of media. Uses and gratifications theory examines what motivations and rewards cause audiences to use media, including how individuals use virtual communications channels in the office. Uses and gratifications theory can apply to many facets of communications, including workplace communication.

Kansas State Research and Extension has undergone many changes due to the COVID-19 pandemic. Extension agents were required to work from home temporarily and had to adapt to technology changes to continue workplace and external communication. The purpose of this study was to determine changes in the use of virtual communications used by Kansas State Research and Extension agents' internal communications as a result of the COVID-19 pandemic. Three research questions were used to guide this study including Q1: To what extent has KSRE agents' use of Zoom, texting by phone, Skype, Slack, and Microsoft Teams changed as a result of the COVID-19 pandemic? Q2: How did their use of virtual communication change in how it satisfied KSRE agents' needs to communicate internal information in the workplace? Q3: How did virtual communications satisfy social gratifications in the office for KSRE agents before March 2020 to the time of the survey (July 2022)?

This study was guided by uses and gratifications theory to understand what virtual communications channels Extension agents used for internal communications and what workplace needs virtual communications satisfied. This study utilized a quantitative Qualtrics survey ($n = 99$). Through a series of side-by-side before and after matrix questions, agents indicated what tasks they use virtual communications for, and what gratifications they receive from virtual communications channels before and two years into the pandemic. Before the COVID-19 pandemic, texting was the main channel of virtual communication used to communicate within the office. Two years into the COVID-19 pandemic, Zoom, texting, and Microsoft Teams are the virtual communications channels most used by agents. While survey results show an increased use and appreciation for virtual communications, agents indicated a preference for in-person communication both before the COVID-19 pandemic and two years into the COVID-19 pandemic for social matters like developing workplace friendships, relationships, and connections. Two years into the COVID-19 pandemic, agents have used virtual communications more than before the pandemic to obtain information, schedule meetings, share work progress and maintain communications when working remotely. Recommendations include Kansas State University Research and Extension support training on Zoom and Microsoft Teams to help agents move toward consistent and efficient use of each virtual communication channel. This study also recommends Extension administration use these forms of virtual communication to communicate with agents when they are not able to meet in person.

Keywords: Extension communication, Uses and Gratifications Theory, COVID-19, virtual communication, organizational communication

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Dedication

This thesis is dedicated to some very special people in my life. First, this thesis is dedicated to those who have gone before me who have helped pave the way for where I am now. To my first best friend, Oliver who loved me and showed me such kindness for 16 incredible years. Next my two late grandmothers, Grandmommie and Grandma Linda for encouraging me to be myself and believe in myself. To my great-grandparents Great Dad, Great Grandma, and Grandma Roeger, thank you for your commitment to our families and being the best bonus grandparents a girl could ask for. Last to Eldon and Esther Kaup for the joy they brought to my childhood.

Lastly, I would like to dedicate this thesis to my nephew Mason Lucas- I hope you grow to be confident, kind and are able to enjoy the same opportunities to follow your dreams.

Chapter 1 - Introduction

Background

In late 2019, an unknown version of pneumonia was reported in Wuhan, Hubei Province, China (Ciotti et al., 2020). Genome analysis revealed this to be a novel coronavirus related to SARS-CoV, and it was named severe acute respiratory syndrome coronavirus 2, or SARS-CoV-2. The World Health Organization declared COVID-19 a pandemic on March 11, 2020 (Cucinotta & Vanelli, 2020).

Some of the more significant impacts of COVID-19 include mask-wearing, social distancing and remote work. These factors have majorly impacted the workplace, in part, because of how sudden changes were implemented (Kniffen et al., 2021). These changes may look different depending on workplace demographics such as workplace location, size of company, and leadership structure (Kniffen et al., 2021). COVID-19 was a sudden and unforeseen crisis that showed many businesses did not have adequate crisis preparedness (Rinn, 2021). One of the biggest changes in the workplace was mandated work-from-home orders from March 2020 to an indefinite date depending on the state. According to a Gartner Inc. survey, nearly 50% of organizations had at least 81% remote workers in April 2020, and nearly 40% of employees surveyed are likely to continue to work remotely after the COVID-19 pandemic (Gartner Inc, 2020).

Kansas State Research and Extension (KSRE) is a network of devoted Extension specialists, agents, researchers, and volunteers who partner with Kansas to solve everyday problems (KSRE, 2022). These professionals strive to improve the lives of Kansas residents by educating, researching, and leading in each of the 105 Kansas counties (KSRE, 2022). Kansas State

Research and Extension strives to take Kansas State University (K-State) research and disseminate it to Kansas audiences who might otherwise not have that information. KSRE research, programming and services relate to adult development and aging, community development, crop production, family and child development, family resource management, farm management, horticulture, livestock production, natural resources, youth development, and nutrition, food safety and health (KSRE, 2020)

The COVID-19 pandemic heavily impacted KSRE both in workplace changes and agents' needs for job interaction in the workplace. KSRE followed K-State guidance on COVID-19 protocol, and staff experienced stay-at-home mandates to work from home from March 2020- August 2020 when they were then encouraged to work from home if at all possible after August 2020. Mask mandates for Extension were in place from July 30, 2020, to March 1, 2022. The COVID-19 pandemic has added new research foci for KSRE personnel. KSRE has added to their focus a mental health component, helping families cope with the stress that may come with the COVID-19 pandemic (Melgares, 2021). KSRE also provides expertise on how the COVID-19 pandemic may impact each of the above-mentioned services and how to cope with the issues that may arise (KSRE, 2022).

Uses and gratifications theory (UGT), developed by Blumler and Katz in the 1940s, intends to understand how, why and with what purpose individuals use the media in their day-to-day lives (Weiyan, 2015). The theory offers insight into how mass audiences can adopt information from television, print, and radio to fit their needs. Uses and gratifications theory was developed to discover the gratifications that attract audiences to the kinds of media and content that will satisfy an individual's psychological and social needs. Another focus of UGT is that instead of being passive media consumers, audiences are active consumers of information through media.

UGT seeks to explain what motivations audiences have to use media, and what gratifications they receive from their use (Temel Eginli & Tas, 2018).

Statement of the Problem

The COVID-19 pandemic caused a strain on communication due to work from home rules (Aziz et al., 2021). This strain extended to many office environments, including Kansas State Research and Extension offices. When the COVID-19 pandemic required Extension agents to stay home, agents were forced to adapt to and implement new technologies both for internal communication and external outreach. Virtual communications technology, such as Zoom, Skype, Slack, and Microsoft Teams, became important tools for office communication during the COVID-19 pandemic (Sah et al., 2020). As of September 2022, there is minimal published research related to the changes in workplace virtual communication due to the COVID-19 pandemic.

The target audiences for this study include Kansas State Research and Extension agents and administration for Kansas, and other states with geographically distanced Extension systems. Extension administration and agents in Kansas and beyond will be able to learn from this research to better facilitate technology training and how agents' internal communications technology and practices have changed.

Purpose of Study and Research Objectives

This research seeks to answer what virtual communications systems were used prior to the COVID-19 pandemic and two years into the pandemic by agents communicating within the workplace. The purpose of this study is also to explore to what extent gratifications explain the reasons KSRE agents chose to use virtual communications to satisfy their needs in the workplace both before the COVID-19 pandemic and two years later. There is minimal scholarly research in

the area of workplace communication changes due to the pandemic. This research is needed to better understand how workplace communication has changed in order to improve workplace communication and how communication will continue to change. Another purpose of this research is to expand current knowledge on workplace virtual communications. This research seeks to answer the following research questions:

Q1: To what extent has KSRE agents' use of Zoom, texting by phone, Skype, Slack, and Microsoft Teams changed as a result of the COVID-19 pandemic?

Q2: How did their use of virtual communication change in how it satisfied KSRE agents' needs to communicate internal information in the workplace?

Q3: How did virtual communications satisfy social gratifications in the office for KSRE agents before March 2020 to the time of the survey (July 2022)?

Definition of Key Terms

Communication: The act or process of using words, sounds, signs, or behaviors to express or exchange information or to express your ideas, thoughts, feelings, etc., to someone else (Encyclopædia Britannica, n.d.).

Virtual communication: Virtual communication is a way people interact with others without being in the same room. It's used by remote teams in an office environment and practically every industry (DiNardi, 2022).

Kansas State Research and Extension (KSRE): K-State Research and Extension improves Kansans' lives, livelihoods and communities through education, research, engagement, and leadership. With scientists, educators, and volunteers in each of the state's 105 counties, their professionals strive to make the university's research and scientific accomplishments accessible to every Kansan (KSRE, 2022).

Extension Agent: Extension agents are community-based faculty of Kansas State University who impact the state by connecting community needs with university resources (KSRE, 2022).

Uses and Gratifications Theory: A Mass Communication theory focusing on needs, motives, and gratifications of media users. The theory states that media consumers are not passive consumers of mass communications; rather, they play an active role in media consumption (The Gordon, 2022).

COVID-19: COVID-19 is a respiratory disease caused by SARS-CoV-2 that spreads mainly from person to person through respiratory droplets produced when an infected person coughs, sneezes, or talks (CDC, 2020).

Pandemic: An epidemic spread over many countries or continents, impacting a large number of people (CDC, 2020).

Microsoft Teams: A virtual communications tool, part of the Microsoft 365 suite, that combines chatting, video calling, and file sharing to keep companies connected (Microsoft, 2022).

Zoom: Zoom is a secure video platform that can be used for workplace communications needs. Zoom can be used for video meetings, phone calls and online events (Zoom, n.d.).

Slack: Slack is a messaging app for businesses that can serve as the messaging headquarter for a company (Slack, n.d.).

Skype: Skype is a free video calling and chatting service that can be used in mobile or desktop modes (Skype, n.d.).

Summary

Communications difficulties changed and challenged workforces due to COVID-19. This indicates a need for research to improve training, facilitation, and use of virtual communications. Effective workplace communication is a large component of a successful workplace (Liu et al., 2018). Individually adopted virtual communication in the workplace has not been fully explored academically and shows need for further research (Liu et al., 2018). Kansas State Research and Extension, like all organizations impacted by the COVID-19 pandemic, is experiencing internal communication challenges and shows a need for the exploration of virtual communications used by agents to communicate with colleagues. This study seeks to understand the change in what uses virtual communications served for Extension agents, what gratifications agents received from these communications technologies, and how these uses and gratifications changed due to the COVID-19 pandemic.

Chapter 2 - Literature Review

COVID-19 Pandemic

Overview

A 2019 undiscovered pneumatic virus was found to be in connection to the Huanan Seafood Wholesale Market in Wuhan, Hubei Province, China (Ciotti et al., 2020). Genome analysis revealed a novel coronavirus related to SARS-CoV, and it was named severe acute respiratory syndrome coronavirus 2, or SARS-CoV-2. The World Health Organization (WHO) declared COVID-19 a pandemic on March 11, 2020 (Cucinotta & Vanelli 2020). During the summer of 2020, government hierarchy played a large role in mandates and stay-at-home orders. Initially, all mandates were made on a local level, then on a state level, and occasionally on a federal level (Cucinotta & Vanelli, 2020).

Spread

The virus is spread person to person from water droplets expressed from the mouth or nose when talking, coughing or sneezing (Guner et al., 2020). Droplets are thought to travel no more than six feet (Galbadge et al., 2020). It is possible to spread the virus by touching surfaces in the home, at work, or in a shop with COVID-19 droplets and then touching one's eyes, mouth, or nose. Risk of transmissions through surfaces is low, but droplets can live on surfaces for several days (Mayo Foundation for Medical Education and Research, 2022). Cleaning high traffic surfaces is one way to ensure that droplets are killed before the virus can be picked up (Mayo Foundation for Medical Education and Research, 2022).

Symptoms

The symptoms of COVID-19 vary greatly in severity and type. Oftentimes carriers can be asymptomatic. Many experience shortness of breath and flu-like symptoms. The most commonly reported symptoms were fever, cough, and shortness of breath. Others reported symptoms include vomiting, diarrhea, sudden loss of taste or smell, and abdominal pain (Ciotti et al., 2020).

During the beginning of the COVID-19 pandemic, children tended to be asymptomatic or not contract the virus at all. As different variants developed, children became more likely to present symptoms (Harvard, 2022). Children with preexisting health problems tended to be more likely to have complications with COVID-19 (Hoelscher et al., 2021).

Many adults had COVID-19 symptoms for only a few weeks and then recovered to lead normal lives. On the other hand, some adults experienced symptoms long after they were contagious. These symptoms could be difficulty breathing and shortness of breath, tiredness, and fatigue, post exertional malaise, difficulty with focus (oftentimes called “brain fog”), rash, rapid mood change, diarrhea, sleep changes, changes in menstrual period cycle and changes in taste or smell (CDC, 2021). Adults have shown more likelihood to have severe symptoms than children or adolescents (Mayo Foundation for Medical Education and Research, 2022).

Prevention

At the time of this research, fall of 2022, measures are being taken to prevent the spread of the virus. These preventative measures include early screening and diagnosis (Guner et al., 2020). At the onset of the spread of the virus, spring and summer of 2020, individuals were encouraged to stay at home when possible and to avoid large crowds and travel. From 2020 to the time of this research preventative measure suggestions have fluctuated depending on the current situation of

the virus and its spread. Throughout the pandemic it was also widely encouraged for individuals to wash or sanitize hands and avoid touching the face or nose after exposure to potentially contaminated environments (Guner et al., 2020). Throughout the world, from the onset of the virus to the spring of 2022, masks were widely used to prevent the spread of COVID-19, especially in busy closed spaces such as retail and grocery stores or on public transportation. Masks used were either disposable medical procedure masks or reusable cloth masks (CDC, 2022).

The spread of misinformation has been a large challenge to COVID-19 prevention. One widespread fallacy was related to masks. In the early phases of the pandemic, health officials encouraged healthy individuals to refrain from buying and wearing masks to save masks for those in healthcare roles or actively infected with COVID-19 (Servick, 2020). Many opposed to mask wearing believed that wearing a mask would limit the oxygen entering the lungs and create unsafe levels of carbon dioxide. The UH Rainbow Babies & Children's Hospital conducted a study measuring heart rate, transcutaneous carbon dioxide tension and oxygen levels in 50 adult volunteers and proved that masks caused little to no risk for individuals wearing them (UH Rainbow, 2020).

Work From Home

Working from home became a common and often unavoidable solution to the risks associated with the COVID-19 pandemic. Employees would work from home beginning spring of 2020-indefinitely unless they were considered essential workers (Blau et al., 2022). Workers in many industries did not know when they would be allowed to return to work in the office.

Essential workers are those whose work was considered necessary to preserve the infrastructure of society and each specific city. Essential workers included energy, childcare, water and wastewater, agriculture and food production, critical retail, critical trades, transportation, and nonprofit and social services workers (NCSL, 2022).

During stay-at-home orders, nonessential workers worked from home, often in home offices, or even from kitchen tables or couches if a home office was not possible. Employees worked from home for as short as a month to over a year. According to a Federal Reserve Bank of Dallas survey with over 5,000 participants, of those employed in February 2020, 8.2 percent worked entirely from home prior to the pandemic; in May of 2020, that number rose to 35.2 percent (Bick et al., 2020). This study also found that success in working from home was greatly dependent on socioeconomic status, showing disproportionate unemployment increases among minorities, women, and low skill workers (Bick et al., 2020). Individuals may be required to work from home temporarily even after mandatory work-from-home orders lifted due to contracting COVID-19, being exposed to COVID-19, or having a person living in your house test positive (CDC, 2021).

Communication when working from home has proven difficult even before the onset of the COVID-19 pandemic (Park et al., 2011). Advances in communication technologies have caused an “always available” outlook by white collar workers, causing difficulty in work life balance for those working remotely (Park et al., 2011). The onset of the COVID-19 pandemic revealed a need for clear and punctual communications between employees when working from home, especially during times of crisis (Zito et al., 2021). During this time of working from home, it was shown that supervisors played a crucial role in communicating with their colleagues and coworkers (Zito et al., 2021). Technostress, a form of occupational stress attributed to

information and communication technology (VandenBos, 2007), also played a significant role when working from home due to extended use of technology during the workday and virtual communications (Zito et al., 2021).

Current Status

The COVID-19 pandemic is ongoing as of September 2022 and has presented many opportunities for updated technology. For example, telemedicine is being used to allow high risk and other patients to get the care they need without potential for exposure (Omboni et al., 2022). Variants have developed from the original strain and are proving to be as infectious as smallpox (Shafer, 2022).

Many people consider the COVID-19 pandemic an ongoing issue, since sickness is still spreading, but there is a discrepancy depending on where people are from (Overton et al., 2021). Those in more population dense areas or bigger cities still use many of the initial safety protocols like social distancing and mask wearing, while many in less populated areas have abandoned some of these practices due to lowered case numbers in their area (Markowitz, 2022).

The COVID-19 pandemic has been largely politically charged. Politically conservative individuals tend to dispute stay-at-home, mask, and vaccine mandates on the grounds of personal freedom. Liberally minded individuals largely supported mask and vaccine mandates on the grounds of group safety and preservation. Both sides of the issue used aggressive persuasion in an attempt to push their sides forward. Many people tend to put party over policy when it comes to COVID-19 mandates, meaning they would rather agree with mandates if they came from a favored political party or politician, rather than agreeing with a policy purely based on its logic or merit (Logan, 2022).

Donald Trump was the President of the United States from 2016-2021 and was the president during the beginning of the COVID-19 pandemic before the inauguration of Joe Biden in January 2021.

COVID Health Communication

Communication for stay-at-home orders, mask procedures and vaccination rollout was highly inconsistent across the country (Overton et al., 2021). The messaging also changed at an incredible speed due to the changing and developing information about the virus. Federal, state, and local information campaigns were developed and changed throughout the COVID-19 pandemic as more information became available. Messaging changed from primarily masking and distancing to adding vaccination information once a vaccine became available (Cleveland Clinic, 2021).

Organizational Communication

Overview

To understand how organizations' use of virtual communications has changed due to the COVID-19 pandemic, it is first important to understand how organizations communicate. Communication practices and technologies have become more important in all organizations, but they are perhaps most important in knowledge-intensive organizations and sectors and, as such, are of great significance to science organizations and to public science management. Studies show the strong connection between communication and trust in an organization (Thomas et al., 2009). Positive organizational communication is beneficial to a company, but research seeking to improve organizational communication is lacking (Boyle et al., 2004).

Before the 1920s, organizational communication was mainly informal in small-medium sized companies (Baker, 2002). As organizations got larger, top-down communication became the standard practice for companies (Baker, 2002). Organizational communication, sometimes called top-down or hierarchical communication, is commonly used in larger companies. Organizational communication can look like a supervisor talking to a subordinate either in person, over the phone, through email or through a company messaging system. The manner and attitude of this communication can strongly impact the morale of the company and of the individual parties in the communication (Zito et al., 2021). Internal organizational communication can be an important aspect of impactful leadership in an organization (Settle et al., 2013).

Kansas State Research and Extension

Overview

K-State Research and Extension is a statewide network of educators sharing unbiased, research-based information and expertise on issues important to Kansas. It has established local, state, regional, national, and international partnerships (KSRE, 2022).

Extension History

The Smith-Lever act of 1914 established the federal, state, and county Cooperative Extension Service. This service was established in connection with Land-Grant universities to aid in disseminating practical and useful information pertaining to agriculture and home economics. This instruction is intended for publics not necessarily attending the land-grant university so that all can receive quality research and information (KSRE, 2022).

Extension professionals agree with a creed when they begin work as an Extension professional. This creed states a belief in people, their hopes, aspirations, and faith, their own plans and decisions, education, self-determination, and leadership. They believe that education is a lifelong process, and the greatest university is the home. They believe that their success as a teacher is proportional to those qualities of mind and spirit that they serve. They believe in intellectual freedom to search for and present the truth without bias and with courteous tolerance to the views of others, and Extension is a link between the people and the ever-changing discoveries in the laboratories. KSRE agents have a strong belief and dedication to public institutions. They are passionate about their work and the opportunity to use their skills to impact humanity (KSRE, 2022).

Kansas Extension Leadership Structure

The structure of Kansas State Research and Extension connects the university with each of the 105 counties in Kansas through local agents. There is an overarching group of Extension administration including a director for Extension, an associate program specialist, two office specialists, and an executive assistant. There are employees in Extension Field Operations including the associate director for field operations, an Extension director for the Eastern, Western, and Central regions, and an office specialist. There are also program leader coordinators for family and consumer science, 4-H, agriculture and natural resources, and community vitality.

Extension agents

Extension agents are professionals employed by land-grant universities to serve the residents of that state (Ag-Careers, 2022). Extension agents are teachers or experts in a particular field such as community vitality, agriculture, youth development, health sciences, and horticulture. Kansas

State Research and Extension has over 230 Extension agents across the state. Agents are typically hired to serve a specific county, district, or area (KSRE, 2022).

Extension Grand Challenges

Kansas State Research and Extension is working to address five grand challenges across the state: global food systems, water, health, community vitality, and developing tomorrow's leaders. To address global food systems, Extension agents have been developing and testing new crop, vegetable, and tree varieties that are suited to the Kansas climate. To address water across the state, agents have been breeding new drought-tolerant crop varieties that can be used for human and pet food, livestock feed, and fuel. To address the health grand challenge, Extension agents have been identifying and implementing practices to help prevent adult and childhood obesity and educating consumers on safe food handling with food preparation, food preservation, food service, and more. To develop tomorrow's leaders across the state, KSRE agents have been meeting the needs of several groups, for example: military youth and their families at Kansas military installations and families of deployed members of the National Guard and Army Reserve. To address community vitality, Extension agents have been helping communities of all sizes maintain necessary services, such as grocery stores, which hire locally and generate local sales tax, and working directly with farmers, ranchers and families to develop better financial management practices (KSRE, 2022).

KSRE COVID-19 Response

During the COVID-19 pandemic, KSRE provided consistent information and literature about COVID-19 to the public. According to their website, KSRE specialists are subject matter experts in many aspects of life that have been impacted by the COVID-19 pandemic and are disseminating information on those topics to the public (KSRE, 2020). One example is

disseminating information about mitigating COVID-19 infection in meat and poultry processing facilities (Donnert, 2020). Their specialists provide unbiased, fact-based help in these subjects free of charge for the benefit of everyone in Kansas and the rest of the world. KSRE uses their COVID-19 page to offer public information on agriculture, business and community, children's education, family, finance, food safety and nutrition, health and wellness, home gardening, state and federal COVID-19 information, and more (KSRE, 2020).

KSRE work-from-home rules

Kansas State Research and Extension has followed Kansas State University guidelines for COVID-19 policies (Elaine Johannes, personal communication, August 28, 2022). On March 15, 2020, the Kansas State University president announced that the University (including KSRE) would be moving to limited in-person operations ("Faculty and Staff Guidance," 2020). KSRE agents were not allowed to work in the office unless they were deemed essential personnel. Agents were given a deadline of March 20, 2020, to retrieve supplies, materials or technology from the office and then were not allowed back in the office. All events, workshops or classes were canceled or held remotely. If these remote meetings were not possible, attendees were required to socially distance during the meeting, but in person meetings were rarely justified ("Faculty and Staff Guidance," 2020).

COVID-19 related Extension studies

While there has been limited research on how the COVID-19 pandemic impacted Kansas State Research and Extension internal communication, there has been research on the pandemic and its overall impact on the Extension system across the United States. The University of Florida conducted a 24-state survey investigating the impact the COVID-19 pandemic had on the mental health of Extension agents (Israel et al., 2022). This study used the Generalized Anxiety Disorder

2-item (GAD-2) screener as the survey instrument. This study found that one-quarter of Extension professionals had a GAD-2 score higher than three. This score indicates anxiety and possible generalized anxiety disorder. These scores were similar to scores seen in the general public. Results contrary to previous literature showed that male and female Extension agents were roughly equal in the prevalence of anxiety symptoms. This study suggested Extension administration consider ways to support their employees with additional support during and after traumatic events (Israel et al., 2022).

Another study, conducted in 2020 explored Extension professionals' information use and work-life stress during the COVID-19 pandemic (Israel et al., 2020). The study found that Extension professionals have been required to pivot some of their information dissemination to online platforms. The study also revealed that Extension professionals use a variety of resources to attain information, and generally have felt well supported and prepared to address the challenges of the COVID-19 pandemic. Widespread stress was reported by Extension professionals, possibly due to the close relationships they have with their clients. This has raised concerns about sustained productivity in the workforce. This study recommends enhancing training on delivering online programs as a means to deliver information to clients. It is also recommended that Extension Administration provide expanded support for Extension professionals who may be struggling with stress, work-life balance, and remote work. This study suggests conducting surveys periodically to monitor the long-term impacts of the COVID-19 pandemic on Extension professionals over time. (Israel et al., 2020)

A 2020 study pooled ideas from the Southeastern Coastal Center for Agricultural Health and Safety and the Agricultural Safety and Health Centers across the nation to better understand the impact of the COVID-19 pandemic on Extension professionals (Sampson et al., 2020). This

survey was administered using Qualtrics online survey platform. The study found many Extension respondents felt prepared to address the professional challenges they faced from the COVID-19 pandemic. It found Extension agents faced high levels of anxiety and stress in a large portion of the respondents. This study highlighted the need to understand unanticipated shifting roles and competing responsibilities within the pandemic. The study recommends attending to the well-being of Extension professionals and to dig deeper into regional differences to better support Extension professionals (Sampson et al., 2020).

Virtual Communications

Virtual Communications

Virtual communication is the process of working with a team and interacting with coworkers and colleagues even when at a distance (Indeed, 2021). Virtual communications can allow a more geographically diverse team because employees can reside somewhere different than the organization. Virtual communications can create effective and efficient work environments by allowing employees to send and receive messages or have video-based meetings wherever they might be. Virtual communications can lead to increased job satisfaction, more collaboration, higher productivity, and cost savings. Types of virtual communications include email, virtual meeting platforms, internet calling, video calling and instant messaging (Indeed, 2021).

Uses and Gratifications Theory

Description

Uses and gratifications theory intends to understand how, why, and with what purpose individuals use the media in their day-to-day lives (Weiyan, 2015). It offers insight into how mass audiences can adopt media, television, print, and radio to fit their needs. For this study, a

uses and gratifications approach was used to discover the gratifications that attract Kansas State Research and Extension agents to the kinds of media and content that will satisfy their psychological and social needs for communication in the workplace.

History

The exact origin of uses and gratifications theory (UGT) is considered unknown. UGT is often seen as originating from the study of “moral panic” and the Payne Fund Report (Weiyan, 2015). The Payne Fund Report originated from public fear that films were harmful to children, and that fame and fortune were results of shortcuts and deviation from acceptable behavior. The Payne Fund financed children and youth research. This fund was asked by the Motion Picture Research Council to support studies on the impact of television on children. An Educational Research Council was created to assign appropriate research to scholars in those fields. The Educational Research Council then designated a budget, and the Payne Fund dispersed the appropriate costs to the universities conducting the research. Research found that children enjoyed and sought different genres of television depending on their age and life stage (Jarvis, 1991).

During the 1950s and 1960s, research was conducted causing the focus of media research to change from media effects to social science (Weiyan, 2015). UGT studies suggested that audience's role was not a passive one, as previously thought but a dynamic one (Katz et al., 1974). In the 1970s, UGT researchers maximized attention on what motivated audiences and how they used media to gratify their specific social and psychological needs (Katz et al., 1974). Since this change in UGT research, there has been heavy focus on the way audiences interact with the media, making this an interdisciplinary research area between UGT researchers and psychologists.

For example, a 2009 study found that individuals use social networking sites to experience a selective, immediate, and meaningful connection with others (Urista et al., 2009). Another study found that social networking, an overarching umbrella of virtual communications, has emerged as a new method of socialization for individuals both young and old (Temel Eginli & Tas, 2018).

Theoretical Framework

During the 2020 work-from-home order, KSRE employees had to adapt to the changes in office communication. This study will be framed with uses and gratifications theory. UGT seeks to explain why people use a specific type of mediated communication, and what gratifications they receive from it (Katz et al., 1974).

The information uses and gratifications in crisis (IUGC) structural model was constructed to measure consumer gratification pertaining to internet use (Sheetz et al., 2019). This model seeks to understand, through uses and gratifications theory, how process, content, and social gratifications impact information satisfaction. Until this model was proposed, uses and gratifications theory primarily focused on television (Stafford et al., 2004). This model indicates there is a difference between uses and gratifications during normal situations as opposed to crisis situations and indicated a need for further investigation (Sheetz et al., 2019).

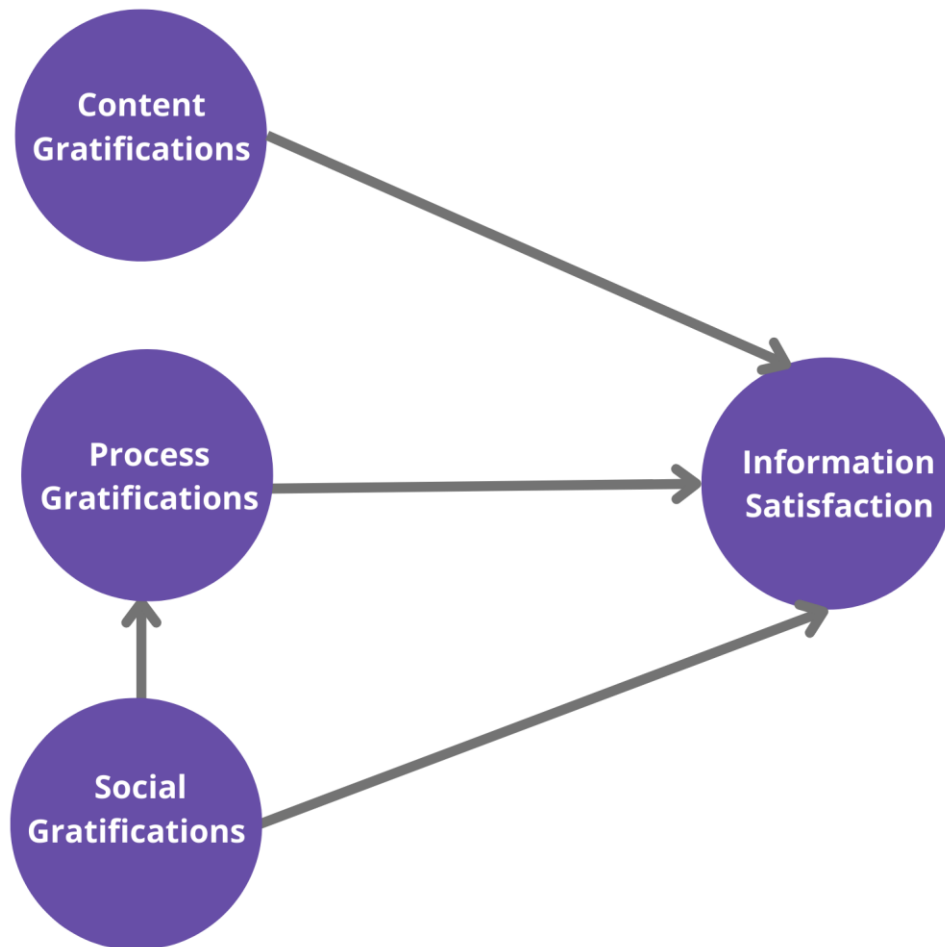
“Content gratification is derived from the use of mediated messages for their direct, substantive, intrinsic value for the receiver” (Cutler & Danowski, 1980, p. 269). Mediated messages may be used to gain understanding or knowledge; to change the amount of specific uncertainty in personal and social situations; or the content might be perceived as useful for the defense of predispositions (Cutler & Danowski, 1980). In the context of this study, content gratification would be gratifications KSRE agents receive by using virtual communications to garner information from their coworkers in day-to-day activities.

Process gratification is a gratification solved by the media to pass the time. Process gratification is derived from the use of mediated messages for extrinsic values (Liu et al., 2010). Audiences enjoy gratifications from the sought-after behavior instead of the messaging (Liu et al., 2010). In the context of this study, process gratifications would be gratifications KSRE agents receive by using virtual communications to pass downtime during the workday.

Social gratification is the gratification internet users receive when they use the internet for social means like chatting and interacting with others. “Social gratification starts from interactivity with other parties through media, the interactivity is the degree that users can swap with each other in the media” (Baker et al., 2014). In the context of this study social gratifications would be gratifications Extension workers receive by using virtual communications to connect and build relationships with their colleagues and coworkers.

The IUGC model is represented in figure 2.1. This model shows that use of content, process, and social gratifications results in information satisfaction. This figure illustrates each motivation for use, becoming information satisfaction. Social gratification can be an information gratification in itself, but it can also contribute to process gratification. For example, using social media can be both a motivation to connect with friends, social gratification to information satisfaction, or it can be used as a way to pass time or entertain oneself causing information satisfaction, social gratification to process gratification to information satisfaction (Sheetz 2019).

Figure 2.1. Recreated Information Uses and Gratifications in Crisis Structural Model



Summary

This chapter examined in detail the COVID-19 pandemic and its repercussions, including the history of the COVID-19 pandemic, how the virus affected individuals, and how it triggered work from home orders that impacted businesses and solidified the increased need for virtual communications. This chapter examined organizational communications, their history and how work groups communicate effectively. This chapter offered an overview of KSRE, its history and leadership structure, Grand Challenges and the steps taken to inform the organization and public of COVID-19 protocols. This chapter explored the uses and gratifications theory and the

Information Uses and Gratifications in Crisis model. UGT explores how people approach media to satisfy their needs. The IUGC model shows how different forms of gratifications connect to information satisfaction.

Chapter 3 - Methods

Introduction

The purpose of this study was to determine to what extent Kansas State Research and Extension agents' use of virtual communication changed as a result of the COVID-19 pandemic. The results of this study could be used to focus internal communication efforts and advise future communication training within KSRE.

These research questions guided the study:

Q1: To what extent has KSRE agents' use of Zoom, texting by phone, Skype, Slack, and Microsoft Teams changed as a result of the COVID-19 pandemic?

Q2: How did their use of virtual communication change in how it satisfied KSRE agents' needs to communicate internal information in the workplace?

Q3: How did virtual communications satisfy social gratifications in the office for KSRE agents before March 2020 to the time of the survey (July 2022)?

Design of the Study

To address the research questions, this study used quantitative research methods with a 21-question survey. The instrument was an online survey developed in Qualtrics, an online data collection software, administered through direct email to Kansas State Research and Extension agents. KSRE agents were chosen as the audience because they were a definable audience, with contact availability. KSRE agents are also spread across the state of Kansas and thus could create a geographically diverse image of workplace virtual communication in the state. The online format of the survey allowed agents to complete this survey on their own time. The instrument was accessible either in mobile or desktop format and it was chosen due to the geographical

distance of KSRE agents and due to the sample size. Online surveys can reach large numbers of people wherever they are (Dillman et. al., 2014). Online surveys also eliminate costs and time associated with mailed and telephone surveys (Dillman et. al., 2014). Communication with the population framed the research as a way to potentially improve communications within the Extension system and as a way to have their voices and opinions heard about the changes in Extension internal communication due to the pandemic. At the end of the survey, participants were invited to share their email address as an optional question for follow-up and/or to share a comment on virtual communications in a long text form answer.

Instrument

A single survey was administered to obtain the results for the objectives of this study (Appendix A). The survey was submitted and accepted by the Institutional Review Board at Kansas State University approval number: #IRB-11227.

The survey was modified from Moon and An (2022) and Xu et al. (2018). Moon and An (2022) sought to explore the uses and gratifications of smartphone use by tourists. The study by Moon and An had guiding questions in their study that were then modified by the current researcher and re-ordered for the first set of matrices in this study. The first set of matrices asked participants about their information uses of virtual communications before March 2020 to the time of the survey (July 2022). Some of these prompts included: I used virtual communications such as video calling (Zoom, Skype, Microsoft Teams, etc.) or virtual chat systems (Slack, texting, Microsoft Teams, etc.) to... Obtain information, provide information on scheduling changes quickly and efficiently, and easily recall information from my colleagues and coworkers. Xu et al. (2018) sought to use uses and gratifications theory for social media for Japanese and Chinese audiences and compared them with western scales. The instrument from

Xu et al. (2018) offered a foundation for the social gratifications questions in the second set of matrices in this study. The second set of matrices focused on how the KSRE agents agreed that use of virtual communications satisfied their needs for relationship building and social gratification before the COVID-19 pandemic to the time of the survey (July 2022). Some of those prompts included: I feel connected to my colleagues and coworkers through the use of virtual communications systems such as Microsoft Teams, Zoom, Slack, texting, or other virtual communications systems, I feel like I can form relationships with new employees by utilizing virtual communications, and I can engage in interesting group conversations through virtual communications.

The Informed Consent was displayed on the first page of the survey; participants were informed of the study purpose, the potential duration of the survey, informed that their participation was confidential and voluntary, provided information about how the data could be used, given contact information for the researcher and the K-State Office of Research Compliance, and informed that moving to the next question was their consent to participate. Participants were also informed of the type of communication the researcher was referring to during the survey and what modes of communication they should exclude from thought when taking this survey. Since email use may not have changed much from before the pandemic to the time of the survey, KSRE agents were asked to not consider email during the two matrix questions.

Demographic questions were modified from an Extension-focused survey published in 2020 by the University of Florida (Israel et al., 2020). This section asked about the amount of time worked in the office versus remote, how long the participant has worked for Kansas State Research and Extension, location of work, gender, ethnicity and race. Following this,

participants were asked if they were willing to be contacted in the case of follow-up questions and provided a place to type their email. Lastly, participants were asked to share any thoughts they might have on the use of virtual communications in their place of work during the COVID-19 pandemic. The entire survey can be viewed in Appendix A.

Panel of Experts

To determine if this survey adequately met the objectives of this study and followed best practices, a panel of experts was used to establish validity. During the month of June 2022, two Kansas State agricultural communications professors, one strategic communications professor, one communications professor, one agricultural education professor and one applied human sciences professor/Extension specialist reviewed the instrument before it was sent to the institutional review board. The panel was used to determine validity, readability, question consistency, and to identify any potential problems. Overall comments on the survey helped with consistency and terminology for extension agents, and these changes were implemented before distribution.

Reliability

To establish reliability, this survey was pilot tested by Kansas State Research and Extension program assistants, educators, and managers. This group of professionals ($n = 37$) was selected because they were outside of the target audience but in a similar group with similar experiences. The pilot test resulted in 20 responses. A Cronbach's alpha was applied to establish reliability (Table 3.1). Cronbach's alpha provides a measure for the internal consistency of a scale or test in a number between zero and one (Tavakol & Dennick, 2011). Acceptable ranges for a Cronbach's alpha start at 0.70 and the maximum possible score is 1.0, scores can be lower if there are fewer questions or poor inter-relatedness between items (Tavakol & Dennick, 2011).

No adjustments were made to the survey except to change titles to KSRE agent instead of KSRE program assistant/manager.

Table 3.1. *Cronbach's alpha for instrument questions in KSRE professional respondents*

	Before			After		
	<i>n</i>	Number of items	Cronbach's α	<i>n</i>	Number of items	Cronbach's α
Question 8	18	5	0.90	17	5	0.82
Question 9	17	4	0.94	17	4	0.89
Question 10	17	6	0.7	17	6	0.94
Question 12	17	4	0.89	16	4	0.79
Question 13	17	5	0.82	16	5	0.67
Question 14	16	6	0.93	17	6	0.79

Data Analysis

To conduct the quantitative data analysis, the results were imported from Qualtrics into a Statistical Package for Social Sciences (SPSS) file. This data was analyzed using descriptive statistics to clean, organize, and summarize the collected data. Using IBM SPSS, descriptive statistics such as frequency, mean, medium, and standard deviation were calculated for all questions. A paired samples t-test was used to determine if there was a difference in participants' use of virtual communications before the COVID-19 pandemic and at the time of the survey (July 2022). A paired samples t-test is used when a researcher wants to compare a participant's score on two tests in order to determine a change from the first test to the second (Crawford et al., 1998). Paired samples t-test was used in this study to compare responses to retrospective pre-post data comparing before March 2020 data to July 2022 data.

Limitations of the Study

July is typically a stressful time for Kansas State Research and Extension agents, as they are preparing for, facilitating, or recovering from their county fairs. The timing of the distribution of this survey and the conflict in work schedule may have caused hurried or less considerate survey responses due to lack of participants' time. With this in mind, the follow-up reminder emails were framed in a considerate and appreciative way.

Another limitation occurred in the difficulty in locating consistent and up-to-date listing and contact information for agents. The researcher visited each county's staff page to cross check an out-of-date list of agents. Each county page had different formatting, and due to staff turnover, accuracy of each email address cannot be confirmed. This might have caused new agents who had not yet been added to the website to be missed, and former agents emailed after they no longer worked with Extension. Other survey limitations include participants scrolling fatigue, incomplete responses, and the inability to ask follow-up questions (Dillman et al., 2014).

Summary

This study was designed to explore the changes in workplace virtual communications before the COVID-19 pandemic to July of 2022. An online survey, including side-by-side matrices, was used to gain an understanding of what workplace virtual communications Kansas State Research and Extension agents used and what social, process and content gratifications communications channels satisfied before and two years into the COVID-19 pandemic. This survey was restructured from established instruments and modified by the author. The survey was then viewed by a panel of six experts to determine validity, then pilot tested to KSRE program assistants and managers to determine reliability. This survey had 99 respondents out of

222 emails distributed for a 45% response rate. The data was viewed through SPSS Statistics and analyzed using descriptive statistics and paired samples t-tests.

Chapter 4 - Results

The purpose of this research was to determine which specific forms of virtual communications were being used by Kansas State Research and Extension agents in the workplace, why they used those forms of communication, and how the uses and gratifications of those virtual communications changed from before March 2020 to July 2022. The results of this study will be used to inform KSRE administration on what forms of virtual communication are being used across the state, how they are being used, and how use has changed from 2020-2022. This information will allow KSRE administration to facilitate relevant training on virtual communications to inform agents of best practices with each form of communication. It will also allow administration to fortify use of these communications structures to better communicate within the organization. The results of this study are reported according to research questions throughout this chapter.

Q1: To what extent has KSRE agents' use of Zoom, texting by phone, Skype, Slack, and Microsoft Teams changed as a result of the COVID-19 pandemic?

Q2: How did their use of virtual communication change in how it satisfied KSRE agents' needs to communicate internal information in the workplace?

Q3: How did virtual communications satisfy social gratifications in the office for KSRE agents before March 2020 to the time of the survey (July 2022)?

First, it is important to determine the demographics of the population surveyed. Descriptive statistics were used for demographic information of participants including gender, years worked for KSRE, work location, ethnicity, and race. It is important to note that not all participants responded to the demographics section of this survey.

The majority of participants responded that they were female (Table 4.1, $n = 51$, 66.2%). Of the participants, 21 (27.3%) reported being male. Three (3.9%) preferred not to share their gender and two (2.6%) preferred to self-describe (Table 4.1).

Table 4.1. *Gender of Kansas State Research and Extension agent survey respondents*

Extension agent Demographics	<i>n</i>	%
Gender		
Male	21	27.3
Female	51	66.2
Nonbinary/third gender	0	0.0
Prefer to self-describe	2	2.6
Prefer not to say	3	3.9

Participants in the survey were asked to report their Extension program region within the state (Table 4.2). The majority of participants reported they were from the Northeast program region ($n = 28$, 36.8%). Of the respondents, 13 (17.1%) work in the Northwest program region, 16 (21.1%) work in the Southeast program region and 19 (25.0%) work in the Southwest program region (Table 4.2).

Table 4.2. *Kansas State Research and Extension agent survey respondents' Program Region*

Extension program region	<i>n</i>	%
Northeast	28	36.8
Northwest	13	17.1
Southeast	16	21.1
Southwest	19	25.0
Statewide	0	0.0

Years worked in Extension were reported in four-year intervals starting at less than one year and going to more than 20 years (Table 4.3). Those over 21 years were reported together. Years worked in Kansas State Research and Extension was largely spread out, but the highest number of respondents answered they worked in Kansas State Research and Extension for 21 or more years ($n = 21$, 27.3%) and the fewest number of respondents answered they had worked in Kansas for Extension for less than one year ($n = 4$, 5.2%) (Table 4.3).

Table 4.3. *Survey responses for years worked for Kansas State Research and Extension*

Years worked for Kansas State Research and Extension	<i>n</i>	%
Less than 1 year	4	5.2
1-5 years	16	20.8
6-10 years	17	22.1
11-15 years	11	14.3
16-20 years	8	10.4
21 or more years	21	27.3

Respondents were asked to answer how often they work in person versus remotely (Table 4.4). The majority answered they work 100% in the office ($n = 58$, 75.3%). Of the respondents, one (1.3%) answered they work from home 3-4 days per week, seven (9.1%) answered they work from home 1-2 days per week and 11 (14.3%) answered their work location was one other than those listed (Table 4.4). Other responses include: two days per month; remote as needed for meetings or recording educational pieces; in the office or field as needed; 1 day per month; 1-3 days per month; 1 day bi-weekly; 1-2 days per month ($n = 3$), and 2 days on average per month (Table 4.4).

Table 4.4. *Work location for Kansas State Research and Extension agent survey respondents*

Work Location	<i>N</i>	%
100% in person in the office	58	75.3
100% from home/remote	0	0.0
3-4 days per week from home/remote	1	1.3
1-2 days per week from home/remote	7	9.1
Other	11	14.3

Participants in the study were asked to indicate their ethnicity (Table 4.5). The majority answered their ethnicity as Not Hispanic or Latino ($n = 69$, 90.8). Of the respondents, two (2.6%) preferred to self-describe, and five (6.6%) preferred not to say their ethnicity. Hispanic or Latino was not represented in this survey (Table 4.5).

Table 4.5. *Ethnicity of Kansas State Research and Extension agent survey respondents*

Ethnicity	<i>N</i>	%
Hispanic or Latino	0	0.0
Not Hispanic or Latino	69	90.8
Prefer to self-describe	2	2.6
I prefer not to say	5	6.6

Participants in the study were asked to indicate their race (Table 4.6). The majority answered their race as White or Caucasian ($n = 69$, 88.5%). Of the respondents, one identified as Asian (1.3%), one identified as Native Hawaiian or Pacific Islander (1.3%), two (2.6%) preferred to self-describe, and five (6.4%) preferred not to say their ethnicity. Black or African American and Native American or Alaskan Native were not represented in this survey (Table 4.6).

Table 4.6. *Race of Kansas State Research and Extension agent survey respondents*

Race	<i>N</i>	%
Black or African American	0	0.0
White or Caucasian	69	88.5
Native American or Alaskan Native	0	0.00
Asian	1	1.3
Native Hawaiian or Pacific Islander	1	1.3
Prefer to self-describe	2	2.6
I prefer not to say	5	6.4

Q1: To what extent has KSRE agents’ use of Zoom, texting by phone, Skype, Slack, and Microsoft Teams changed as a result of the COVID-19 pandemic?

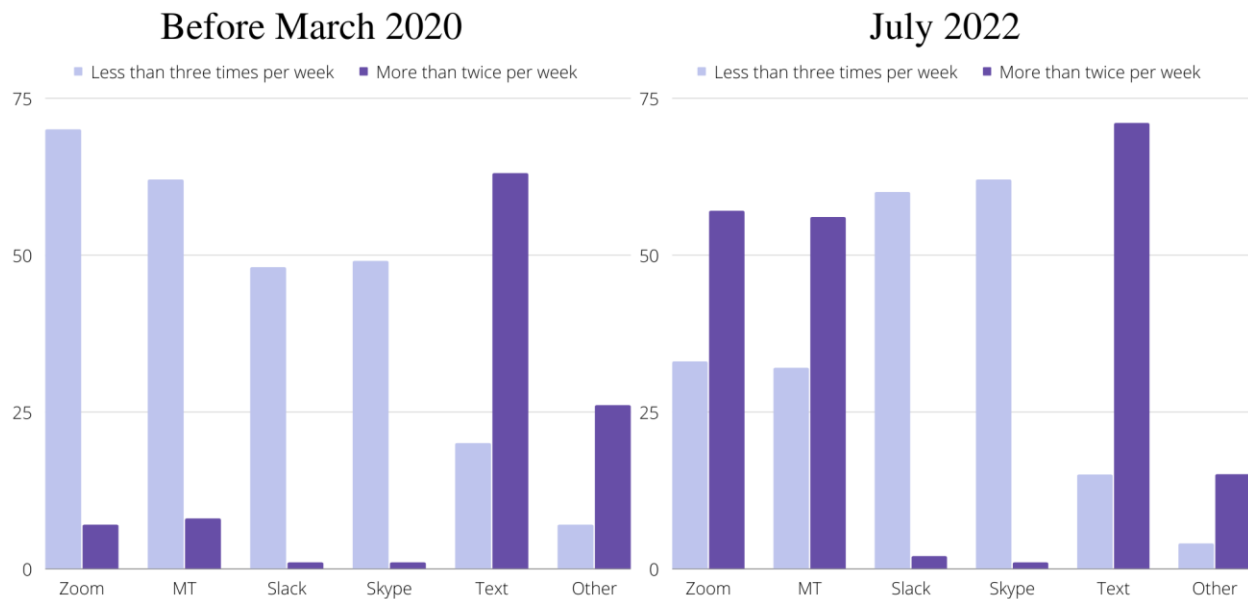
To determine the change in virtual communication used before the COVID-19 pandemic and at the time of the survey (July 2022), participants were asked to select which virtual communications channels they used from a list. Respondents were asked to indicate their frequency of use for each virtual communications channel as “less than three times per week,” or “more than twice per week” before March 2020 and at the time of the survey (July 2022). This

question measures frequency of use of each virtual communication channel, and how use changed. Table 4.7 shows an increase in frequency of use for Microsoft Teams, Zoom, and texting by phone. Slack and Skype use increased but is mostly used only one to two times per week (Table 4.7). Responses to the “other” option included email ($n = 7$) social media and voice calling by phone.

Table 4.7. *Virtual Communications frequency of use by Kansas State Research and Extension agent respondents*

	Less than three times per week				More than twice per week			
	Before		Present		Before		Present	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Zoom	70	70.7	33	33.3	7	7.1	57	57.6
Microsoft Teams	62	62.6	32	32.3	8	8.1	56	56.6
Slack	48	48.5	60	60.6	1	1.0	2	2.0
Skype	49	49.5	62	62.6	1	1.0	1	1.0
Texting by phone	20	20.2	15	15.2	63	63.6	71	71.7
Other	7	7.1	4	4.0	4	26.3	15	15.2

Figure 4.1. Virtual Communication Channels Used Before March 2020 to July 2020 and Their Frequency of Use



Q2: How did their use of virtual communication change in how it satisfied KSRE agents’ needs to communicate internal information in the workplace?

To determine how virtual communications satisfied agents’ needs to communicate in the workplace before and two years into the COVID-19 pandemic, survey participants were asked to respond to a matrix question with the prompt: I used virtual communications such as video calling (Zoom, Skype, Microsoft Teams, etc.) or virtual chat systems (Slack, Texting, Microsoft teams, etc.) to... See table 4.8 for items and results. Participants responded on a Likert scale of “Everyday (5), Often (4), Sometimes (3), Rarely (2) or Never (1)”. Table 4.8 shows the results of a paired samples t-test including the mean, standard deviation, t-score, significance and Cohen’s d of each of the prompts. Each item had a statistically significant change in mean and a Cohen’s d score above 0.8 (Table 4.8), which shows a stronger power of the connection. N values differ on some prompts due to survey dropout or personal refusal to answer. If a participant only

answered once for the prompt, either before or present, their answer was eliminated to avoid inconsistent data. T-scores for this table ranged from 5.798 to 13.520.

Table 4.8. *Information uses by Kansas State Research and Extension agents for virtual communications from before March 2020 to July 2022*

	Before		After		T	p	Cohen's d
	M	SD	M	SD			
Obtain information (<i>n</i> = 70)	2.53	1.133	3.74	.988	10.736	<0.001	.946
Schedule in-person meetings (<i>n</i> = 70)	2.36	1.192	3.33	1.164	6.966	<0.001	1.167
Schedule remote meetings (<i>n</i> = 70)	2.16	1.072	3.61	.937	12.159	<0.001	1.003
Seek out professional development opportunities (<i>n</i> = 70)	2.34	1.166	3.51	1.087	9.389	<0.001	.980
Keep up with unit events (<i>n</i> = 70)	2.34	1.166	3.51	1.087	8.994	<0.001	1.090
Keep my colleagues/ coworkers up to date with my work progress. (<i>n</i> = 70)	2.06	1.178	3.37	1.182	10.144	<0.001	1.067
Keep my colleagues/ coworkers up to date with my personal life. (<i>n</i> = 69)	1.83	1.070	2.45	1.170	5.798	<0.001	.888
Have a record of interactions with a colleague/ coworker. (<i>n</i> = 69)	1.90	1.139	2.86	1.342	8.012	<0.001	.985
Share photos and/or videos with colleagues/ coworkers I may no longer see every day. (<i>n</i> = 69)	1.91	.966	2.62	1.238	7.156	<0.001	.820
Make my workflow easier (<i>n</i> = 69)	2.04	1.077	3.41	1.204	11.002	<0.001	1.029
Quickly contact colleagues and coworkers for simple information. (<i>n</i> = 69)	2.26	1.221	3.77	1.139	10.808	<0.001	1.158
Ask colleagues and coworkers complicated questions. (<i>n</i> = 70)	1.99	1.161	2.99	1.148	8.972	<0.001	0.933
Easily recall information from my colleagues and coworkers. (<i>n</i> = 69)	2.09	1.134	3.19	1.375	8.999	<0.001	1.017

Provide information on scheduling changes quickly and efficiently. (<i>n</i> = 70)	2.14	1.062	3.39	1.219	9.726	<0.001	1.069
Have the flexibility to work in a remote or hybrid environment while maintaining easy communication with colleagues and coworkers. (<i>n</i> = 70)	1.59	.752	3.27	1.062	13.520	<0.001	1.055

Q3: How did virtual communications satisfy social gratifications in the office for KSRE agents before March 2020 to the time of the survey (July 2022)

To determine how virtual communications satisfied agents' needs for relationship building in the workplace before and after the COVID-19 pandemic, survey participants were asked to respond to a matrix question with the prompt: "Please respond to the next set of statements based on the degree to which you agree or disagree with them." Participants were able to respond on a scale of "Strongly Agree (5), Somewhat Agree (4), Neutral (3), Somewhat Disagree (2), Strongly Disagree (1) or Not Applicable (9)". Not applicable answers were removed from the data before paired samples t-test was run. There were between zero and 17 "Not applicable" responses to each item. The omission of "Not Applicable" responses decreased the sample size for the paired sample t-test for this question set. Table 4.9 shows the results of the paired samples t-test including the mean, standard deviation, t-score, significance, and Cohen's *d* of each of the prompts. All answers showed statistically significant change ($p < 0.001$) except for the prompt: "It is easier for me to connect to colleagues and coworkers through in-person interactions than virtual interactions" ($p = 0.066$). Each item had a Cohen's *d* score above 0.8, and t-scores ranged from 1.530-8.884.

Table 4.9. *Social Gratifications of virtual communications use among Kansas State Research and Extension agent survey respondents before and two years into the COVID-19 pandemic*

	Before		After		T	P	Cohen's d
	M	SD	M	SD			
I feel connected to my colleagues and coworkers through the use of virtual communications systems such as Microsoft Teams, Zoom, Slack, texting or other virtual communications systems (<i>n</i> = 51)	2.20	1.13	3.84	1.007	8.884	<0.001	1.324
I feel the relationships with my colleagues and coworkers are deepened by the use of Microsoft Teams, Zoom, Slack, texting or other virtual communications systems (<i>n</i> = 55)	2.00	1.106	3.25	1.322	6.822	<0.001	1.364
I think my work relationships are enriched by the availability of Microsoft Teams, Zoom, Slack, texting or other virtual communications systems (<i>n</i> = 52)	2.12	1.096	3.37	1.205	6.720	<0.001	1.341
I can effectively communicate with colleagues and coworkers through the use of virtual communications (<i>n</i> = 54)	2.50	1.255	3.93	1.061	7.737	<0.001	1.354
I feel like I can form relationships with new employees by utilizing virtual communications (<i>n</i> = 54)	1.98	1.037	3.24	1.273	7.009	<0.001	1.320
I feel I can form work friendships by using virtual communications (<i>n</i> = 54)	1.94	0.920	3.09	1.307	6.445	<0.001	1.309
It is easier for me to connect to colleagues and coworkers through in-person interactions than virtual interactions (<i>n</i> = 55)	3.62	1.509	3.91	1.323	1.530	0.066	1.410
It is easier for me to connect to colleagues and coworkers through	1.94	1.162	2.73	1.430	4.264	<0.001	1.333

virtual interactions than in-person interactions ($n = 52$)

I feel like I am not alone working remotely when I communicate with my colleagues and coworkers through virtual measures. ($n = 49$)

2.45 0.980 3.41 1.135 5.563 <0.001 1.207

I feel like I can effectively communicate surface level topics with my colleagues and coworkers when using virtual communications ($n = 53$)

2.81 1.257 3.96 0.898 6.640 <0.001 1.262

I feel like I can effectively communicate controversial topics with my colleagues and coworkers when using virtual communications. ($n = 51$)

1.92 1.111 3.04 1.216 5.907 <0.001 1.351

I can obtain advice and learn from my colleagues and coworkers through virtual communications. ($n = 55$)

2.89 1.257 4.07 0.940 7.688 <0.001 1.140

Virtual communications systems such as Microsoft Teams, Zoom, and Slack, are useful tools for communicating within my Extension programming group. ($n = 55$)

2.75 1.265 4.07 1.152 7.022 <0.001 1.402

I can keep updated with my employer, colleagues, and coworkers through virtual communications ($n = 53$)

2.81 1.226 4.17 0.893 7.594 <0.001 1.302

I can engage in interesting group conversations through virtual communications ($n = 53$)

2.57 1.279 3.72 1.133 5.793 <0.001 1.446

Summary

This chapter contains the results of a uses and gratifications theory study completed in July of 2022. This study was designed to determine change in the uses and gratifications of virtual internal communications in the workplace by Kansas State Research and Extension agents before the COVID-19 pandemic to July of 2022 as a result of the COVID-19 pandemic (March 2020-July 2022). The participants of this survey who responded to the demographics section were primarily non-Latino, white females. All KSRE program regions were represented by participants of the survey, with a majority of demographic respondents located in Northeast Kansas. Almost all participants worked in the office 100% of the time. Zoom, Microsoft Teams texting by phone showed an increase in users and frequency of use. All but one matrix prompt (“It is easier for me to connect to colleagues and coworkers through in-person interactions than virtual interactions”) showed statistically significant increases from before March 2020 to July 2022.

Chapter 5 - Conclusions and Discussion

Introduction

This study was designed to understand what forms of virtual communications are used by Kansas State Research and Extension agents within the workplace; and how those uses have changed as a result of the COVID-19 pandemic; and what gratifications agents have experienced from these virtual communications channels. The following questions guided this research:

Q1: To what extent has KSRE agents' use of Zoom, texting by phone, Skype, Slack, and Microsoft Teams changed as a result of the COVID-19 pandemic?

Q2: How did their use of virtual communication change in how it satisfied KSRE agents' needs to communicate internal information in the workplace?

Q3: How did virtual communications satisfy social gratifications in the office for KSRE agents before March 2020 to the time of the survey (July 2022)?

A quantitative research approach was used to explore agents' use of virtual communication channels, their frequency of use, and the social and content gratifications obtained from their use. Survey responses were collected and analyzed with SPSS Statistics using frequencies and paired samples t-tests. Results were then interpreted by uses and gratifications theory.

This chapter will summarize conclusions and discussions of this study as it relates to past research. Later it will provide recommendations for future Extension communication practices, furthering research, and overall workplace communication.

Conclusion and Discussion

To understand the audiences' virtual communication uses, questions were asked about which virtual communications channels they used, and what social and content gratifications

they obtained from those channels and what social and content. A summary of results for each research question are explained in this chapter with framing from previous literature.

Q1: To what extent has KSRE agents' use of Zoom, texting by phone, Skype, Slack, and Microsoft Teams changed as a result of the COVID-19 pandemic?

In order to understand the changes in virtual communications due to the COVID-19 pandemic, an understanding of their uses before the pandemic is needed. This study collected data on types of virtual communication and their frequencies, asking agents about their virtual communications habits before March 2020 and at the time of this survey (July 2022). Table 4.7, *Virtual Communications frequency of use by Kansas State Research and Extension agent respondents* on page 36, displays pre-pandemic uses by agents. Most forms of virtual communications, (Zoom: 70%, Microsoft Teams 62%, Slack 48.5%, Skype 49.5%, and Other virtual communications channels 7.1%) were used less than three times a week in the workplace by the majority of agents prior to the COVID-19 pandemic. Texting by phone was used for work purposes more than twice per week by 63.6 percent of agents before the COVID-19 pandemic, and since the COVID-19 pandemic, 71.7 percent of agents texted by phone more than twice per week.

The major finding in this study is that chatting and video virtual communications are being used by more Kansas State Research and Extension agents and more often for communication within the workplace. More Extension agents are using Zoom (before: 7.1%, after 57.6%), Microsoft Teams (before: 8.1%, after: 56.6%), and texting by phone (before: 63.6%, after: 71.7%) more often than they were before the COVID-19 pandemic. While use of Zoom, Microsoft Teams and texting by phone increased, most agents use Slack (60.6%, n = 60) and Skype (62.6%, n = 62) less than three times a week at the time of the survey. According to

“other” responses, more agents are also using other methods of virtual communications such as email, voice calling, and video call by phone more often than they were before the COVID-19 pandemic. This aligns with previous literature concluding that virtual communications use is increasing within a workplace directly in relation to the COVID-19 pandemic (DeFillippis et al., 2022). DeFilippis et al. (2022) analyzed a large sample of metadata comprised of email and meeting data that have been impacted by lockdown orders. DeFilippis et al. (2022) analyzed the data using an OLS regression-based event study to examine how the data varied before and after the lockdown. This study determined that virtual communications have been used after the COVID-19 pandemic as a way to shorten meeting length and free up time during the day that would otherwise be used for meetings (DeFillippis et al., 2022). While email and marketing data research is informative, it does not go into detail on which virtual communications channels are being used. The results on KSRE agents’ changes in virtual communications use provides some answers to research question 1: To what extent has KSRE agents’ use of Zoom, texting by phone, Skype, Slack, and Microsoft Teams changed as a result of the COVID-19 pandemic?

Q2: How did their use of virtual communication change in how it satisfied KSRE agents’ needs to communicate internal information in the workplace?

To better understand the change in uses of virtual communications satisfying needs to communicate information in the workplace, first, the responses from before March 2020 must be considered. Responses were scored 1= strongly disagree, 2= disagree, 3= neutral, 4= agree, 5= strongly agree. For this research, real limits from Lawson et al. (2019) were used to interpret responses: 1.00 to 1.49 = strongly disagree; 1.50 to 2.49 = disagree; 2.50 to 3.49 = neither agree nor disagree; 3.50 to 4.49 = agree; and 4.50 to 5.00 = agree strongly. The mean scores before the

COVID-19 pandemic ranged from 1.59- 2.53, showing agents strongly disagreed to disagree that the use of virtual communications satisfied their information needs when communicating in the workplace. After the COVID-19 pandemic, the mean ranges for this question set were 2.45-3.77, disagree to agree, showing an increase in the use of virtual communications to satisfy information needs. This research showed a statistically significant change in all fields of Table 4.8 *Information uses by Kansas State Research and Extension agents for virtual communications from before March 2020 to July 2022* when responding to the prompt “I used virtual communications such as video calling (Zoom, Skype, Microsoft Teams, etc.) or virtual chat systems (Slack, Texting, Microsoft teams, etc.) to...” Statistical significance in a change in mean indicates that changes are real and tangible, not simply due to chance (Gallo, 2016). Paired sample t tests are commonly used by researchers to determine change in a population by difference in mean when analyzing a set of data from two time periods (The t-Test, 2020). A higher t-score indicates greater change in mean from the first set of data to the next. In other studies, virtual communications growth has been shown by Zoom video calling, which increased in users across the world from 10 million to 200 million from December 2019 to the onset of the COVID-19 pandemic in March 2020 (Zoom Blog 2020). The data presented in this study shows the greatest change in mean before March 2020- present (July 2022) was “I use virtual communications to: Have the flexibility to work in a remote or hybrid environment while maintaining easy communication with colleagues and coworkers.” The mean score went from 1.59, strongly disagree, before March 2020 to 3.27, neither agree nor disagree. This statistically significant change in mean shows the increase of virtual communication in the workplace as a tool to be flexible in work location. The smallest change in mean score was “I use virtual communications to keep my colleagues and coworkers up to date with my personal life.” Real

limits show that before March 2020 agents disagreed with the prompt, and in July 2022 agents neither agreed nor disagreed with the prompt. The mean score change, while significantly significant, shows that agents did not agree or disagree with the use of virtual communications for social updates with their coworkers in July 2022. The results of Q2 demonstrate an increased need for workplace virtual communications when seeking information in the office. The increased need for virtual communications is striking considering that almost all Extension agents are back in the office full time (n = 58, 75.3%). Q2's data suggests the adoption of virtual communications by Extension agents for internal use has gained popularity even when agents are back working in the office. Virtual communications are being actively chosen for information use in the workplace. The results of this research surfaces implications about how office workers are communicating within their office and what long-lasting impacts work-from-home orders may have on workplace communication as a whole.

Q3: How did virtual communications satisfy social gratifications in the office for KSRE agents before March 2020 to the time of the survey (July 2022)

To better understand how virtual communications satisfied the needs of relationship building in the office, the mean scores before March 2020 must be considered. Results were scored 1=Strongly Disagree- 5= Strongly Agree, and 9= Not Applicable. "Not Applicable" responses were removed from analysis because the item did not apply to the participant and thus could not be included in the sample mean. For this research, real limits from Lawson et al. (2019) were used to interpret responses: 1.00 to 1.49 = strongly disagree; 1.50 to 2.49 = disagree; 2.50 to 3.49 = neither agree nor disagree; 3.50 to 4.49 = agree; and 4.50 to 5.00 = agree strongly. Before March 2020, mean scores for this set of questions ranged from 1.92-2.89 indicating disagreement

to neither agreeing nor disagreeing for 14 of 15 items. The 15th item, “It is easier for me to connect to colleagues and coworkers through in-person interactions than virtual interactions” had a mean score of 3.91 falling in the “Agree” real limit. As of July 2022, the mean scores for virtual communication for social gratifications ranged from 2.73-4.17, indicating real limits of neither agree nor disagree or agree. The prompt “It is easier for me to connect to colleagues and coworkers through in-person interactions than virtual interactions,” is the only item in this study that did not show a statistically significant change. This indicates that while virtual communications are potentially gratifying social needs in the office, individuals still find in-person communication easier for connecting with colleagues and coworkers both before and two years into the COVID-19 pandemic. This is supported by the July 2022 response to the prompt “It is easier for me to connect to colleagues and coworkers through virtual interactions than in-person interactions,” which had the lowest present mean in this set of items ($m = 2.73$, neither agree nor disagree). This is supported by Extension’s long history of successful in-person learning and communication (Conner et al., 2018). The highest t-score was for the prompt “I feel connected to my colleagues and coworkers through the use of virtual communications systems such as Microsoft Teams, Zoom, Slack, texting or other virtual communications systems.” This prompt’s mean increased by 1.64, the largest increase from March 2020 to the time of this survey (July 2022). This conclusion indicates that while virtual communication may not be an agent’s preferred form of connection, it is still a tool agents use to form connections in the office.

Recommendations

Results of this survey offer recommendations for future research, theory, and Extension implementation. These recommendations include follow-up research, model expansion, welcoming flexible workplace communication, and prioritizing thoughtful selection of virtual communication channels.

Research

This research filled gaps related to changing uses and gratifications of virtual communications by Kansas State Research and Extension agents before the COVID-19 pandemic work-from-home orders in March 2020 versus present use as of July 2022. However, gaps still remain in understanding how communication has changed for Extension agents on a larger scale due to the COVID-19 pandemic. It is recommended that another quantitative survey be implemented on a larger scale to add data and scope. This study focused purely on Kansas State Research and Extension agents, and it is recommended to extend this survey to a larger audience of Extension agents to better understand national change in virtual communication uses and gratification changes due to the COVID-19 pandemic.

A heavier focus on process gratifications is recommended to more fully use the IUGC model. This study did not look at process gratifications due to time constraints both within a master's program and within the survey instrument and relevance to the audience. Another area to be researched is expanding the location of Extension agents past Kansas. COVID-19 looked very different depending on city and state location (Adeline et al., 2022). These differences in COVID-19 pandemic experience could show a difference in virtual communication changes for Extension agents throughout the United States. The experiences of a Kansas State Research and Extension agent could be vastly different than one in a more population-dense state.

Theory

Uses and Gratifications Theory

KSRE agents were likely encouraged to use virtual communications channels supported by Kansas State University and channels with which they had training. Their continued use of virtual communications while back in the office indicates support of uses and gratifications theory, because agents are now able to choose their communications methods more freely. One of the major assumptions of uses and gratifications is that audiences are not passive users and are proactive when choosing media. UGT as a theory places heavy focus on film, which is not as relevant to office communications. This study suggests continuing use and development of internet specialized models because those applied more readily to new media and communications styles. More so, to better understand what motivations individuals have for virtual communications in the workplace, this study suggests the formation of a new model specifically focused on uses and gratifications in the workplace.

IUGC Model

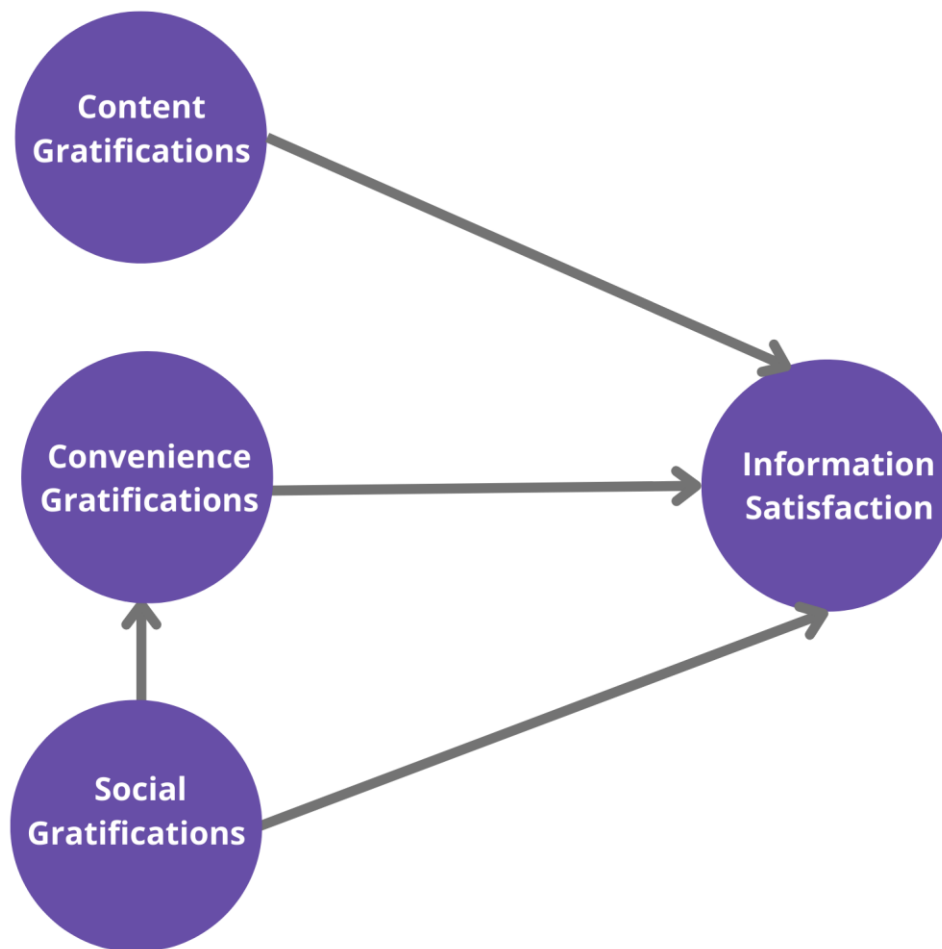
The current study suggests replacing the Process Gratifications section in the IUGC model with Convenience Gratifications. The IUGC model was created to look at how individuals use the internet, while this study explored how virtual communications (most using the internet) in the workplace have changed. While most of the IUGC model translated well to these needs, Process Gratifications did not so easily. Process Gratifications are often seen as ways to entertain oneself or kill time. In a workplace it may not be appropriate to seek out entertainment gratifications, so process gratifications were excluded from this research.

Convenience is a factor that might have been worthwhile to explore, especially considering the speed of virtual communications. Convenience gratifications have been explored by several other

studies. For example, a 2015 study explores social media marketing using five gratification factors; information, convenience, entertainment, self-expression, and social interaction (Choi et al., 2015). A 2013 study explores the uses and gratifications of social media with the factors entertainment, passing time, convenience, relationship maintenance and impression management (Langstedt, 2013). Likewise, a 2010 education study explored the uses and gratifications students received from computer mediated communication using the factors: information seeking, convenience, connectivity, problem solving, content management, social presence, and social context cues (Guo et al., 2010 p. 339-378). However, few have used convenience in their model when exploring workplace communications.

Some aspects of virtual communications convenience were explored in this study with the Likert Scale prompts, “I used virtual communications such as video calling (Zoom, Skype, Microsoft Teams, etc.) or virtual chat systems (Slack, Texting, Microsoft teams, etc.) to:” “Make my workflow easier,” “Easily recall information from my colleagues and coworkers,” and “Have the flexibility to work in a remote or hybrid environment while maintaining easy communication with colleagues and coworkers.” Future Convenience Gratifications questions for this prompt could include “Save time when contacting colleagues or coworkers,” etc. This updated IUGC model could be helpful to better understand workplace communication. The following figure (Figure 5.1) displays this suggested updated model.

Figure 5.1. Suggested Modifications to IUGC Model



Practice

Communication in Extension can be a complicated process due to office locations spread across the state. This research recommends Kansas State Research and Extension engage in virtual communication where appropriate and as preferred by the KSRE agent. As recommended by Newman and Ford (Newman & Ford, 2020), it is important to meet teams where they are. The data presented in this study can be used to show when it is appropriate to use virtual communications, or what aspects of work communications teams prefer to keep to traditional in-person communication methods. This data recommends Extension administration support agents to choose their meeting and communication styled when meeting. One method would be to add

communication preferences to meeting schedule requests, such as a poll for date, time, place, and whether it should be in-person, hybrid, or remote. While remote work might not be an option for KSRE agents, offering virtual meetings could be a convenient change for agents who would otherwise need to travel for a meeting. The data in the study can also show what specific virtual communications channels are preferred by agents to better facilitate training and best practices on those channels. This research recommends that when virtual communications are needed, prioritize the agents' preferred virtual channels when possible. It is also recommended that administration, upon seeing results of this study, approach virtual communications with openness, and continue their use to support Extension agents keeping their virtual communications skills up to date. In that same thread, it is recommended that Extension offer in-person relationship building opportunities to support agents' preference to make connections in person. Technology availability is an important factor in the workplace to reduce stress and maximize productivity (Morgan & Gore, 2019). This data also shows a continued use of technology, which shows a need for technology for Extension agents such as reliable internet, powerful computers, headphones, webcams and microphones to keep virtual communications an accessible means for information gratification in the workplace. Reliable and quality technology could be the difference between a productive video call and an unproductive video call. This research shows an increase in virtual communication use from March 2020 to July 2022, and an increase in social and information gratification over the time period. This could indicate that agents became more comfortable with the virtual communications technology as they learned to use it. This shows a need to train entry-level college students on virtual communication as part of the onboarding process since not all new hires will have experience with the same virtual communications channels that KSRE is using. New agents may need a refresh or training on how

to use virtual communication channels, and how to use them as an engaging tool in meetings. To continue to use virtual communications effectively, occasional workshops or refresh courses will allow virtual communications to continue their usefulness.

Summary

Changes in virtual communication by Kansas State Research and Extension agents have many implications on workplace communication, virtual communication gratifications, and future Extension communication procedures. This study was framed with uses and gratifications theory, focusing on social and content gratifications. Social gratifications explain what social motivations lead individuals to a particular gratification. Content gratifications explain what information motivations lead individuals to a particular gratification. The IUGC framework led this study to explore what content and social gratifications Extension agents received by using virtual communications in the workplace and how those gratifications have changed due to the COVID-19 pandemic. Social and content gratifications were explored using a 10-minute survey answered by Extension agents across the state of Kansas. This survey asked participants to indicate their use of different virtual communications channels and their frequency of use for communication within the workplace. Next, participants were asked to answer a set of prompts indicating their use of virtual communications for information gratifications. Next, they answered a set of prompts indicating their use of virtual communications for social gratifications. Data was analyzed using frequencies to summarize the results and paired samples t-tests to examine changes in gratifications over time. The data showed an increase in the number of agents using Zoom, Microsoft Teams, and texting by phone, as well as the frequency of their use. The analysis also found increases in the use and value virtual communications had for social and content purposes in the workplace. Agents' use of virtual communications to allow a more

flexible work environment when needed grew in mean, indicating their use of virtual communications for potential remote work. Ability to have flexibility and easy communication while working remotely is the greatest change in mean in this study. This shows the value Extension agents place on communication to make their workflow more flexible in staying connected. Overall, results show that even after stay-at-home orders expired, agents are still choosing to use virtual communications more than they did prior to March 2020 as a means to communicate within the office. Survey results indicated KSRE agents can use virtual communications to build relationships with their coworkers and colleagues, but they still prefer to make workplace connections in person. It is recommended for Extension to recognize the differences in communication from agent to agent in order to meet agents where they are comfortable. A summary of recommendations includes further research to expand the scope of this study, continued use and growth of the IUGC model, and KSRE administration support for KSRE agents. This study recommends agents preferences are considered when selecting their meeting format. While most agents are required to work in the office, allowing agents to choose their meeting format will satisfy a convenience gratification that has shown mean growth, represented in the survey prompt: “Have the flexibility to work in a remote or hybrid environment while maintaining easy communication with colleagues and coworkers.” It is also recommended to create an onboarding training to help new Extension agents understand and execute virtual communications. Extension administration should offer continued training to agents interested in using virtual communications in the workplace to keep skills sharp and up to date. This research suggests a need for further research to expand knowledge of virtual communications as it changes and grows. There is a need to expand research past Kansas to

better understand how agents in different areas different geographic regions use virtual communications.

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Appendix A - Survey Instrument

KM Thesis - Final Survey

Start of Block: Default Question Block

Q1 Thank you for your willingness to participate in this survey. Your response to this survey is valued. The purpose of this survey is to better understand how the COVID-19 pandemic affected your use of virtual communication for work. This survey should take no longer than 10 minutes. It is considered research and will be confidential. Your participation is voluntary, and you can skip any questions you do not want to answer.

In this survey, "communication" or "virtual communication" applies specifically to how you communicate within Extension programming groups such as colleagues and coworkers, not communication provided to the public. For the purposes of this survey, virtual communications are considered video calling (Zoom, Skype, Microsoft Teams, etc.) or virtual chat systems (Slack, texting, Microsoft Teams, etc.). Please exclude your use of email as a virtual communication.

There is no foreseeable risk in participating in this research, and there is no direct benefit in participating in this research. If you do not agree to participate, you do not have to fill out the survey (refusing to participate will result in no penalty or loss). "It is possible that your responses, without your personal information, could be stored and used for future research studies or by future researchers without asking for further consent." Beginning this survey is your consent to participate in the research. For additional information regarding human participation in research, contact the Kansas State University, Office of Research Compliance at

(785) 532-3224. If you have any questions specific to this survey or project, please feel free to contact me directly at kmesserla22@ksu.edu.

Thank you,

Katie Messerla, Master's student in Agricultural Communications

Page Break

Q2 Do you work for Kansas Extension as an Extension agent?

☐ Yes (1)

☐ No (2)

Skip To: End of Survey If Do you work for Kansas Extension as an Extension Agent? = No

Q3 Before the COVID-19 pandemic (before March 2020), what form(s) of virtual communication did you use less than three times per week to communicate within your extension programming group? (Select all that apply)

☐ Zoom (2)

☐ Microsoft Teams (3)

☐ Slack (4)

- ☐ Skype (5)
- ☐ Texting by phone (6)
- ☐ Other (7) _____

Q4 Before the COVID-19 pandemic (before March 2020), what form(s) of virtual communication did you use more than twice a week to communicate within your Extension programming group? (Select all that apply)

- ☐ Zoom (2)
- ☐ Microsoft Teams (3)
- ☐ Slack (4)
- ☐ Skype (5)
- ☐ Texting by phone (6)
- ☐ Other (7) _____

Page Break

Q5 Since the COVID-19 pandemic, what form(s) of virtual communication do you currently use less than three times per week to communicate within your Extension programming group? (Select all that apply)

- ☐ Zoom (2)
- ☐ Microsoft Teams (3)
- ☐ Slack (4)
- ☐ Skype (5)
- ☐ Texting by phone (6)
- ☐ Other (7) _____

Q6 Since the COVID-19 Pandemic, what form(s) of virtual communication do you currently use more than twice a week to communicate within your Extension programming group? (Select all that apply)

- ☐ Zoom (2)
- ☐ Microsoft Teams (3)
- ☐ Slack (4)
- ☐ Skype (5)
- ☐ Texting by phone (6)
- ☐ Other (7) _____

Page Break

Q7 For the next set of questions, you'll compare how you used virtual communications before March 2020 to how you use them now.

Q8 I used virtual communications such as video calling (Zoom, Skype, Microsoft Teams, etc.) or virtual chat systems (Slack, texting, Microsoft Teams, etc.) to...

	Before March 2020					Present				
	Everyday (5)	Often (4)	Sometimes (3)	Rarely (2)	Never (1)	Everyday (5)	Often (4)	Sometimes (3)	Rarely (2)	Never (1)
Obtain information. (1)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Schedule in-person meetings. (2)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Schedule remote meetings. (3)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Seek out professional development opportunities. (4)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Keep up with
unit events.
(5)



Page Break

Q9 Please answer the next set of statements based on the frequency you use a form of virtual communications for their purpose.

I used virtual communications such as video calling (Zoom, Skype, Microsoft Teams etc.) or virtual chat systems (Slack, texting, Microsoft Teams, etc.) to...

	Before March 2020					Present				
	Everyday (5)	Often (4)	Sometimes (3)	Rarely (2)	Never (1)	Everyday (5)	Often (4)	Sometimes (3)	Rarely (2)	Never (1)

Keep my
colleagues/
coworkers
up-to-date
with my
work
progress. (1)

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Keep my
colleagues/
coworkers
up-to-date
with my
personal
life. (2)

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Have a
record of
interactions
with a
colleague/
coworker.
(3)

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Share
photos
and/or
videos with
colleagues/
coworkers I
may no
longer see
every day.
(4)

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Page Break

Q10 Please answer the next set of statements based on the frequency you use a form of virtual communications for their purpose.

I used virtual communications such as video calling (Zoom, Skype, Microsoft Teams, etc.) or virtual chat systems (Slack, texting, Microsoft Teams, etc.) to...

	Before March 2020					Present				
	Everyday (5)	Often (4)	Sometimes (3)	Rarely (2)	Never (1)	Everyday (5)	Often (4)	Sometimes (3)	Rarely (2)	Never (1)
Make my workflow easier. (1)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Quickly contact colleagues and coworkers for simple information. (2)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Ask colleagues and coworkers complicated questions. (3)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Easily recall information from my colleagues and coworkers. (4)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Provide information on scheduling changes quickly and efficiently. (5)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Have the flexibility to work in a remote or hybrid environment while maintaining easy communication with colleagues and coworkers. (6)



Page Break

Q11 Now we'd like to understand how how you might benefit from virtual communications with respect toward your role with Kansas Research and Extension. Again, you'll compare your pre-pandemic experiences to what you experience currently pertaining to virtual communications such as video calling (Zoom, Skype, Microsoft Teams, etc.) or virtual chat systems (Slack, texting, Microsoft Teams, etc.)

Page Break

Q12 Please respond to the next set of statements based on the degree to which you agree or disagree with them.

	Before March 2020						Present					
	Strongly Agree (5)	Somewhat Agree (4)	Neutral (3)	Somewhat Disagree (2)	Strongly Disagree (1)	Not Applicable (9)	Strongly Agree (5)	Somewhat Agree (4)	Neutral (3)	Somewhat Disagree (2)	Strongly Disagree (1)	Not Applicable (9)
I feel connected to my colleagues and coworkers through the use of virtual communications systems such as Microsoft Teams, Zoom, Slack, texting or other virtual communications systems. (1)	○	○	○	○	○	○	○	○	○	○	○	○
I feel the relationships with my colleagues and coworkers are deepened by the use of Microsoft Teams, Zoom, Slack, texting or other virtual communications systems. (2)	○	○	○	○	○	○	○	○	○	○	○	○

I think my work relationships are enriched by the availability of Microsoft Teams, Zoom, Slack, texting or other virtual communications systems. (3)



I can effectively communicate with colleagues and coworkers through the use of virtual communications. (4)



Page Break

Q13 Please respond to the next set of statements based on the degree to which you agree or disagree with them.

	Before March 2020					Present						
	Strongly Agree (5)	Somewhat Agree (4)	Neutral (3)	Somewhat Disagree (2)	Strongly Disagree (1)	Not Applicable (9)	Strongly Agree (5)	Somewhat Agree (4)	Neutral (3)	Somewhat Disagree (2)	Strongly Disagree (1)	Not Applicable (9)

I feel like I can form relationships with new employees by utilizing virtual communications. (1)

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

I feel I can form work friendships by using virtual communications. (2)

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

It is easier for me to connect to colleagues and coworkers through in-person interactions than virtual interactions (3)

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

It is easier for me to connect to colleagues and coworkers through virtual interactions than in-person interactions. (4)

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

I feel like I am not alone working remotely when I communicate with my colleagues and coworkers through virtual measures.
(5)



Page Break

Q14 Please respond to the next set of statements based on the degree to which you agree or disagree with them.

	Before March 2020						Present					
	Strongly Agree (5)	Somewhat Agree (4)	Neutral (3)	Somewhat Disagree (2)	Strongly Disagree (1)	Not Applicable (9)	Strongly Agree (5)	Somewhat Agree (4)	Neutral (3)	Somewhat Disagree (2)	Strongly Disagree (1)	Not Applicable (6)
I feel like I can effectively communicate surface level topics with my colleagues and coworkers when using virtual communications. (1)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

I feel like I can effectively communicate controversial topics with my colleagues and coworkers when using virtual communications. (2)

○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○

I can obtain advice and learn from my colleagues and coworkers through virtual communications. (3)

○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○

Virtual communications systems such as Microsoft Teams, Zoom, and Slack, are useful tools for communicating within my Extension programming group. (4)

○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○

I can keep updated with my employer, colleagues, and coworkers through virtual communications. (5)

○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○

I can
engage in
interesting
group
conversations through
virtual
communications. (6)

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Page Break

Q15 How much of your work time is remote vs. in person, on average?

- ☐ 100% in person in the office (1)
- ☐ 1-2 days per week from home/remote (2)
- ☐ 3-4 days per week from home/remote (3)
- ☐ 100% from home/remote (4)
- ☐ Other (please specify) (5) _____

Q16 How many years have you worked for Kansas Extension/Cooperative Extension?

- ☐ Less than 1 year (1)
- ☐ 1-5 years (2)
- ☐ 6-10 years (3)

- ☐ 11-15 years (4)
- ☐ 16-20 years (5)
- ☐ 21 or more years (6)

Q17 In what Extension program region of Kansas do you work?

- ☐ Northeast (1)
- ☐ Northwest (2)
- ☐ Southeast (3)
- ☐ Southwest (4)
- ☐ Statewide (5)

Q18 How would you describe your gender

- ☐ Male (1)
- ☐ Female (2)
- ☐ Non-binary / third gender (3)
- ☐ Prefer to self describe (4) _____
- ☐ Prefer not to say (5)

Q19 How would you describe your Ethnicity? (Please check all that apply)

- ☐ Hispanic or Latino (4)
 - ☐ Not Hispanic or Latino (7)
 - ☐ Prefer to self describe (8)
-

☐ I prefer not to say (9)

Q22 How would you describe your race? (Please check all that apply)

- ☐ Black or African American (1)
 - ☐ White or Caucasian (2)
 - ☐ Native American or Alaskan Native (3)
 - ☐ Asian (4)
 - ☐ Native Hawaiian or Other Pacific Islander (5)
 - ☐ Prefer to self describe (6)
-

☐ I prefer not to say (7)

Q20 May we contact you if we have follow-up questions?

☐ Yes, please use this email to contact me: (1)

☐ No (2)

Q21 Do you have any further thoughts on the use of virtual communications within your place of work during the COVID-19 pandemic that you would like to share?

End of Block: Default Question Block

End of Survey

I sincerely appreciate your time spent participating in this survey. Again, please feel free to contact me with any questions at kmesserla22@ksu.edu.

Thanks,

Katie Messerla, Master's student in Agricultural Communications

Appendix B - Internal Review Board Application

View xForm - IRB Application for Approval

IRB Application for Approval

Data Entry

- Submitted 07/07/2022 12:50 AM ET by Katie Messerla Amendment Header

Form Creator

Katie Messerla

Email: kmesserla22@k-state.edu

Principle Investigator Output

Katie Burke

Email: kjburke@k-state.edu

Department Output

Communications & Ag Education

College Output

College of Agriculture

Protocol Number Output

IRB-11227

Please provide a concise description of all of the changes that you are proposing and the justification for the changes.

Small modifications were made to the informed consent. These modifications were made to streamline the informed consent, in order to rephrase research industry jargon. This is intended to make the survey more personable to increase completion rate. The statement, "It is possible that your responses, without your personal information, could be stored and used for future research studies or by future researchers without asking for further consent." will be added to inform participants about the use of their data. Participants will also be given a definition of virtual communications to clarify that the

questions in the survey are about inter-office communication, and not necessarily public communication.

Are you changing/amending personnel identified on the protocol? No

Administrative Information

Instructions

Form Creator

Katie Messerla

Email: kmesserla22@k-state.edu

Title of Project/Course

What are the uses and gratifications of virtual communications for Kansas State Research and Extension agents during the COVID-19 Pandemic

Project Classification

Thesis

Short form criteria

None of the Above

Does this project involve any collaborators not part of the faculty/staff at KSU? (projects with non-KSU collaborators may require additional coordination and approvals):

No

Funding Source

N/A

Please provide a copy of the sponsor's grant application or contract as submitted to the funding agency, if applicable.

No answer provided.

Based upon criteria found in 45 CFR 46 – and the overview of projects that may qualify for exemption explained at <http://www.hhs.gov/ohrp/policy/checklists/decisioncharts.html>, I believe that my project using human subjects should be determined by the IRB to be exempt from IRB review:

Yes

Requested Exempt Category

2 Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording).

Study Information

Non-Technical Synopsis

A survey using uses and gratifications theory will attempt to answer these questions: How did the pandemic change Extension agents use of virtual communications

How did their use of virtual communication satisfy their needs to communicate in the workplace

Did virtual communications satisfy needs of relationship building in the office

Background

During the COVID-19 pandemic, Kansas Research and Extension agents found communication channels more heavily based in virtual communications and had to adapt to these changes. Uses and gratifications theory is a way to find an answer to the above questions by investigating what caused agents to communicate in the way they did.

Project/Study Description

The purpose of this study is to explore to what extent process gratifications and social gratifications explain the reasons KSRE agents chose to use virtual communications to satisfy their needs in the workplace. This research seeks to answer what virtual communications systems were used by agents communicating within the workplace.

Objectives of this survey are to:

Describe the characteristics of the population

Describe the social, process, and content gratifications of KSRE agents in virtual communications before and after COVID-19
Describe the information satisfaction of KSRE agents in virtual communications before and after COVID-19
Identify any significant changes in social gratifications, process gratifications, content gratifications, and information satisfaction before and after COVID-19.

Objective

How did Kansas Research and Extension agents virtually communicate with one another?
Why did they use those forms of virtual communication?
What did they use virtual communication for in their work groups?

Design and Procedures

List all sites where this research will be conducted:

A digital survey will be distributed. Extension agents across the state of Kansas will respond to the survey

List all Variables to be Studied:

Extension agents, their virtual communications habits

This survey will be in pretest posttest format to discover the changes agents saw in their usage of virtual communications before and then after the COVID-19 pandemic.

Data Collection Methods

Online survey through Qualtrics

Supporting Documents for Data Collection

Messerla Uses and Gratifications Theory Survey.docx Electronic Survey

List any factors that might lead to a subject dropping out or withdrawing from a study.

Not wanting to finish the survey/ answer a question/ internet

Will Biological Samples be Collected/Taken?

No

Debriefing procedures for participants:

N/A the results will not be shared directly with survey respondents but may learn about results by reading published journal article in the future

Research Subjects

Provide the source of Subject Population used in the research activity: Extension agents in the state of Kansas

Number of Subjects

There are approximately 240 agents, this number is fluid due to the hiring process and open positions. According to Krejcie and Morgan's table, a sample size of 148 is ideal.

Inclusion Criteria

They are employed as an extension agent in the state of Kansas

Exclusion Criteria

Participants will be excluded from the form under 18

How will subjects be identified?

I will use the extension agent list from ext admin. Or use county websites to find email addresses

How will subjects be recruited?

Sources will be sent an email inviting them to participate in the study.

How will subjects be enrolled in the study?

Subjects will enroll by agreeing to consent and completing the survey

Describe any follow-up recruitment procedures:

Reminder emails will be sent after one week of the survey going out.

Risk-Protection-Benefits

Risk-Protection-Benefit:

Risk for Subjects (check all that apply)

Examining for personal or sensitive information in surveys or interviews

In your opinion, does the research involve more than minimal risk to subjects?

No

Minimizing Risk:

Though the survey questions do not directly ask sensitive or personal questions, the study relates to a time in respondents' lives that may be considered sensitive and/or challenging. We are minimizing risk by including this statement in the consent form: "If for any reason you experience strong emotions while completing this survey and would like to talk to someone in Extension, please feel free to contact Elaine Johannes at ejohanne@ksu.edu". Otherwise, no more than minimal risk is anticipated.

Provide Study Benefits:

Benefits include a better understanding of virtual communication uses and rewards before and after a pandemic

Confidentiality
Confidentiality

Explain the type of data that will be collected:

Electronic

Explain where, and how, the data will be stored:

Qualtrics and password-protected computer

Explain the time frame of the data storage, to include how data will be destroyed:

Kept as long as regulations require-at time all data files will be deleted/cleared.

Explain who will have access to the data, and privacy/security provisions:

Data will be stored on password protected computers, only Dr. Burke and Katie Messerla will have access to the data collected

Informed Consent

Informed Consent

Are you using a written informed consent form?

Yes

Attach a copy of the informed consent form here.

UPDATED Informed Consent .docx Consent Form

In accordance with guidance in 45 CFR 46, I am requesting a waiver or alteration of informed consent elements (see section VIII above).

No

Are you using the Consent Form template provided by the URCO? Yes

Are your research subjects anonymous?

Yes

Are subjects debriefed about the purposes, consequences, and benefits of the research?

No

Please provide an explanation for not Debriefing the participants/subjects.

Participants will not be debriefed as results will not be available until after the completion of the survey, but may come across results in a published journal article

Describe the Informed Consent Process:

Who is Obtaining the Consent?

Katie Messerla, Graduate Student

When and where will consent be obtained?

Uses and Gratifications survey: immediately prior to taking the survey

If assent (for minors) is required, please describe who will obtain the assent?

N/A

If assent (for minors) is required, when and where will assent be obtained?

N/A

How will consent be obtained from non-English speaking participants?

If non-English speaking participants are identified as participants in the study, all materials including consent form will be translated.

Informed Consent Checklist

Select the correct response:

Does the title appear at the top of the consent/assent form? Yes
Is the consent/assent form written toward the subject? Yes

Is there a statement that explains that the study is research?

Is there a statement that explains the purpose of the research?

Are the procedures to be followed explained clearly and adequately?

Does the consent document describe risks or discomforts to subjects as a result of participating in the research?

Is the consent/assent form written in the native language of the potential subject?

Yes Yes Yes Yes Yes

Are participants compensated? No

If the subjects' identity is known to the PI, does the form detail how confidentiality of records will be maintained?

Is contact information for both the PI and the URCO/IRB office included?

Does the consent document indicate to the participant that they can withdraw at any time from the project without penalty or loss of benefit?

Are there probable circumstances which would require the PI to terminate a subject's participation regardless of their consent?

A statement that identifiers might be removed from the identifiable private information or identifiable biospecimens and that, after such removal, the information or biospecimens could be used for future research studies or

distributed to another investigator for future research studies without additional informed consent?

Yes Yes Yes

No No

A statement that the subject's information or biospecimens No

collected as part of the research, even if identifiers are removed, will not be used or distributed for future research studies.

A statement that biospecimens (even after identifiers are removed) may (or may not) be used for commercial profit and whether subjects will or will not share in the profit.

A statement that clinically relevant research results will or will not be provided to subjects.

A statement indicating whether or not the research project will or will not include whole genome sequencing.

Is the consent document written in lay language (Recommended 8th grade level)?

Project Information

Project Information:

Will deception of Subjects be used in the research? No

No

No No Yes

Will shock or other forms of punishment be used in the research? No

Will sexually explicit materials or sexual experience be used or collected as part of the research?

No

Will information about sexual orientation be part of the research? No

Will information about sexual abuse be part of the research? No

Will there be handling of money or other valuable commodities as part of this research?

No

Will there be extraction or use of blood, other bodily fluids, or tissues in this research?

No

Will questions about any kind of illegal or illicit activity be a part of the research?

No

Will questions about protected health information as defined by HIPAA be part of the research?

No

Will there be purposeful creation of anxiety as part of the research? No

Will any procedure that might be viewed as an invasion of privacy be used in the research?

No

Will physical exercise or stress be part of the research? No

Will there be administration of substances (food, drugs, etc.) to subjects as part of the research?

No

Will any procedure that might place subjects at risk be part of the research?

No

Will there be any use of Radioactive materials and/or use of Radioactive producing machines as part of the research?

No

Will any form of potential abuse; (i.e., psychological, physical, sexual) be used in the research?

No

Is there potential for the data from this project to be published in a journal, presented at a conference, etc?

Yes

Will data be collected using surveys, questionnaires, or interviews? Yes

Attach the Data Collection Instrument

Messerla uses and gratifications theory Survey.docx Electronic Survey

Is this a Clinical Trial?

No

Subject Information

Subject Information:

Will individuals under 18 years of age be part of the research? No

Will individuals over 65 years of age be part of the research? No

Will minorities be the target population used in the research? No

Will physically or mentally disabled individuals be part of the research?

No

Will economically or educationally disadvantaged individuals be part of the research?

No

Will any individual be unable to provide their own legal informed consent?

No

Will pregnant females be the target population?

No

Will the target population be victims?

No

Are subjects in institutions?

No

Are subjects likely to be vulnerable to coercion or undue influence? No

Is this international research?

No

Are research subjects in this activity students recruited from university classes or volunteer pools?

No

Is audio from the subjects recorded?

No

Are research subjects' images being recorded (video taped, digitally recorded, photographed)?

No

FDA Activities and Conflict of Interest

FDA Activities:

Is this a Clinical Trial?

No

Are you using an FDA approved drug/device/diagnostic test? No

Does this activity involve the use of FDA-Regulated products? No

Have you submitted an FDA form 3454 or 3455 (conflict of interest)? No

Conflict of Interest

Do you or the institution have any proprietary interest in a potential product of this research, including patents, trademarks, copyrights, or licensing agreements?

No

Do you have an equity interest in the research sponsor? No

Do you receive significant payments of other sorts, (eg., grants, equipment, retainers for consultation and/or honoraria) from the sponsor of this research?

No

Do you receive payment per participant or incentive payments? No

Project Collaborators

Additional Attachments

Additional Attachments:

No answer provided.

Online Training

Online Training

Mandatory Training

Responsible Conduct of Research
IRB core modules (IRB Researchers and personnel on IRB protocols)

Required (Provost-mandated) for all full-time K-State employees Export Compliance

Required procedure-specific training (check all that apply to this protocol):

N/A

INVESTIGATOR ASSURANCE

Please click next and submit, in order to send to PI for signature.

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Appendix C - Institutional Review Board Approval Letter



TO: Katie Burke Proposal Number: IRB-11227 Communications & Ag Education
Manhattan, KS 66506

FROM: Sara Rosenkranz, PhD, Chair
Committee on Research Involving Human Subjects

DATE: 06/14/2022

RE: Proposal Entitled, "What are the uses and gratifications of virtual communications for Kansas State Research and Extension agents during the COVID-19 Pandemic."

The Committee on Research Involving Human Subjects / Institutional Review Board (IRB) for Kansas State University has reviewed the proposal identified above and has determined that it is EXEMPT from further IRB review. This exemption applies only to the proposal - as written – and currently on file with the IRB. Any change potentially affecting human subjects must be approved by the IRB prior to implementation and may disqualify the proposal from exemption.

Based upon information provided to the IRB, this activity is exempt under the criteria set forth in the Federal Policy for the Protection of Human Subjects, **45 CFR §104(d), category:Exempt Category 2 Subsection ii.**

Certain research is exempt from the requirements of HHS/OHRP regulations. A determination that research is exempt does not imply that investigators have no ethical responsibilities to subjects in such research; it means only that the regulatory requirements related to IRB review, informed consent, and assurance of compliance do not apply to the research.

Any unanticipated problems involving risk to subjects or to others must be reported immediately to the Chair of the Committee on Research Involving Human Subjects, the University Research Compliance Office, and if the subjects are KSU students, to the Director of the Student Health Center.

Electronically signed by Sara Rosenkranz, PhD on 06/14/2022 4:43 PM ET

203 Fairchild Hall, Manhattan, KS 66502 | (785) 532-3224 | fax: (785) 532-3278

TO: Katie Burke
Communications & Ag Education
Manhattan, KS 66506

FROM: Sara Rosenkranz, PhD, Chair
Committee on Research Involving Human Subjects

DATE: 07/07/2022

RE: Proposal #IRB-11227, entitled "What are the uses and gratifications of virtual communications for Kansas State Research and Extension agents during the COVID-19 Pandemic."

MODIFICATION OF IRB PROTOCOL #IRB-11227, ENTITLED, "What are the uses and gratifications of virtual communications for Kansas State Research and Extension agents during the COVID-19 Pandemic"

EXPIRATION DATE: Exempt

The Committee on Research Involving Human Subjects (IRB) has reviewed and approved the request identified above as a modification of a previously approved protocol. **Please note that the original expiration remains the same.**

All approved IRB protocols are subject to continuing review at least annually, which may include the examination of records connected with the project. Announced in-progress reviews may also be performed during the course of this approval period by a member of the University Research Compliance Office staff. Unanticipated adverse events involving risk to subjects or to others must be reported immediately to the Chair of the IRB, and / or the URCO

It is important that your human subjects activity is consistent with submissions to funding / contract entities. It is your responsibility to initiate notification procedures to any funding / contract entity of any changes in your activity that affects the use of human subjects.